OCT 22 1988

980-E

I TC 1.12: 337-TA-275

259

In the Matter of

CERTAIN NONWOVEN GAS FILTER ELEMENTS

Investigation No. 337-TA-275

USITC PUBLICATION 2129

September 1988

COMPLETED

ORIGINAL

United States International Trade Commission • Washington, DC 20436

VL

BEST COPY AVAILABLE

UNITED STATES INTERNATIONAL TRADE COMMISSION

COMMISSIONERS

Anne E. Brunsdale, Acting Chairman
Alfred E. Eckes
Seeley G. Lodwick
Susan Liebeler
David B. Rohr
Ronald A. Cass

Address all communications to
Kenneth R. Mason, Secretary to the Commission
United States International Trade Commission
Washington, DC 20436

BEST COPY AVAILABLE

TABLE OF CONTENTS

Limited Exclusion Order

Commission Opinion on Remedy, the Public Interest, and Bonding

Initial Determination (Public Version)

Order No. 13: Initial Determination Granting Complainant's Motion for Summary Determination on the Economic Issues (Public Version)

Errata to Order No. 13

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C. 20436

In the Matter of)
)
CERTAIN NONWOVEN)
GAS FILTER ELEMENTS)

Investigation No. 337-TA-275

LIMITED EXCLUSION ORDER ORDER

Having determined that there is a violation of section 337 of the Tariff Act of 1930 (19 U.S.C. § 1337) in the unauthorized U.S. importation and sale of the subject nonwoven gas filter elements, having examined the record in this investigation, including the written submissions of the parties on the issues of remedy, the public interest, and bonding, and having determined that the public interest factors listed in subsection (d) of section 337 (19 U.S.C. § 1337(d) do not preclude the remedy ordered in paragraph 1, it is hereby ORDERED:

1. Nonwoven gas filter elements manufactured by or on behalf of respondent Filtrair, bv, DeWerf 16, 8440 AP Herrenveen, The Netherlands or any of Filtrair bv's successors, assigns, affiliated persons or companies, parents, subsidiaries, licensees, or other related business entities of Filtrair, bv, that infringe claims 1, 2, 3, 6, 7, and/or 8 of U.S. Letters Patent 4,056,375 (see Attachments A and B), are excluded fromm entry into the United States for the remaining term of that patent, *i.e.*, until November 1,

1994, except under license of the patent owner (see Attachment C) or as provided by law.

2. The excluded articles shall be entitled to entry into the United States under bond in the amount of 12 percent of the entered value of such articles from the day this Order is received by the President pursuant to subsection (g) of section 337 of the Tariff Act of 1930 (19 U.S.C. § 1337(g)). This provision for entry under bond shall remain in effect until such time as the President notifies the Commission that he approves or disapproves this Order or, if the President fails to take such action, no later than 60 days after the date on which the President received this Order.

3. Notice of this Order shall be published in the Federal Register.

4. The Secretary shall serve copies of this Order and the Commission Opinion on Remedy, the Public Interest, and Bonding on each party of record to this investigation and on the Department of Health and Human Services, the Department of Justice, the Federal Trade Commission, and the Secretary of the Treasury.

By order of the Commission.

Kenneth R. Mason
Secretary

Issued: August 26, 1988

ATTACHMENTS TO LIMITED EXCLUSION ORDER

A. U.S. Letters Patent 4,056,375

B. Reexamination Certificate for U.S. Letters Patent 4,056,375

C. Assigments of U.S. Letters Patent 4,056,375

A.

Certified Copy of

U.S. Patent No. 4,056,375

Form (12-80)

U. S DEPARTMENT OF COMMERCE
United States Patent and Trademark Office

June 30, 1987
(Date)

HIS IS TO CERTIFY that the annexed is a true copy from the records of this office

U.S. Patent 4,056,375.

By authority of the
COMMISSIONER OF PATENTS AND TRADEMARKS

G. V. Dorsey
Certifying Officer.

BEST COPY AVAILABLE

OR [illegible]

United States Patent [19]

Ringel et al.

[11] **4,056,375**

[45] **Nov. 1, 1977**

---

[54] **GAS FILTER ELEMENT**

[75] Inventors: **Wolfgang Ringel**, Morlenbach; **Peter Kutsch**, Absteinach; **Rolf Schneider**, Weinheim; **Edgar Kohl**, Abtsteinach, all of Germany

[73] Assignee: **Firma Carl Freudenberg**, Weinheim an der Bergstrasse, Germany

[21] Appl. No.: 720,327

[22] Filed: Sept. 3, 1976

[30] **Foreign Application Priority Data**

Sept. 17, 1975 Germany 2541331

[51] Int. Cl.² B01D 46/02

[52] U.S. Cl. .... 55/381; 55/483; 55/500; 55/514; 55/521; 55/528; 210/493 R

[58] Field of Search .... 55/378, 381, 379, 382, 55/483, 484, 497–499, 500, 521, 528, 514; 210/493, 497 R, 323 R, 323 T

[56] **References Cited**

U.S. PATENT DOCUMENTS

3,190,059	6/1965	Bauder et al.	55/382
3,386,231	6/1968	Nutting	55/484
3,422,602	1/1969	Janson	55/378

FOREIGN PATENT DOCUMENTS

2,201,111	4/1974	France	55/379

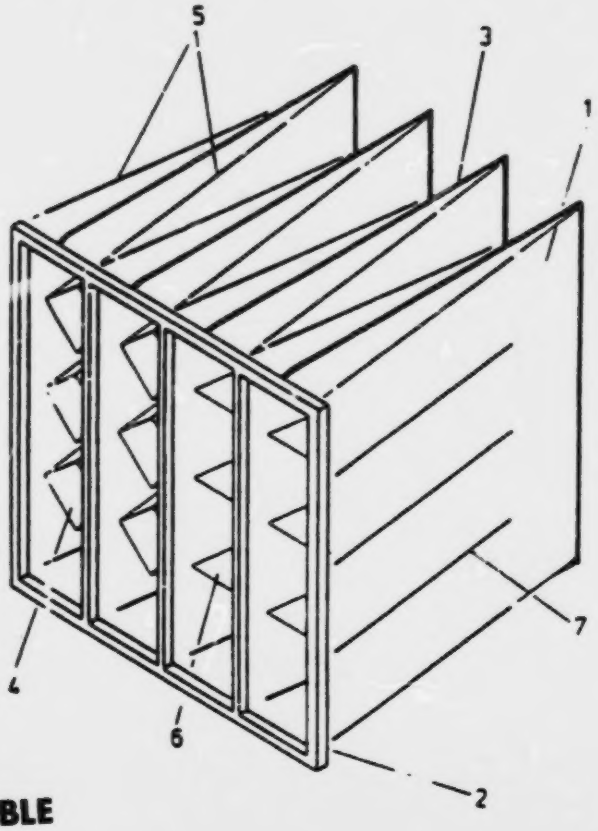
Primary Examiner—Bernard Nozick

Attorney, Agent, or Firm—Burgess, Dinklage & Sprung

[57] **ABSTRACT**

A gas filter element comprising a holding frame and a plurality of self-supporting wedge-shaped filter pockets each having its wide end open and secured to said frame, each element comprising a pair of substantially symmetrical pocket halves secured to one another along the wedge edge and centrally along the opposite wedge end faces, and a plurality of laminar spacing elements with each pocket extending from adjacent the open end toward the wedge edge, each spacing element being secured to the opposite inclined wedge faces, each filter pocket being rendered self-supporting by the securing of the sub-elements to one another and the securing of the spacing elements to the pocket. Advantageously the filter pockets each comprises fusible fibers, the pocket halves being joined to one another by fusion and the spacing elements being secured to the pocket by fusion. The remaining wedge edges also may be stiffened by fusion and additional stiffening lines may be provided in each inclined wedge face extending from adjacent the open end toward the wedge edge.

9 Claims, 2 Drawing Figures



BEST COPY AVAILABLE

6

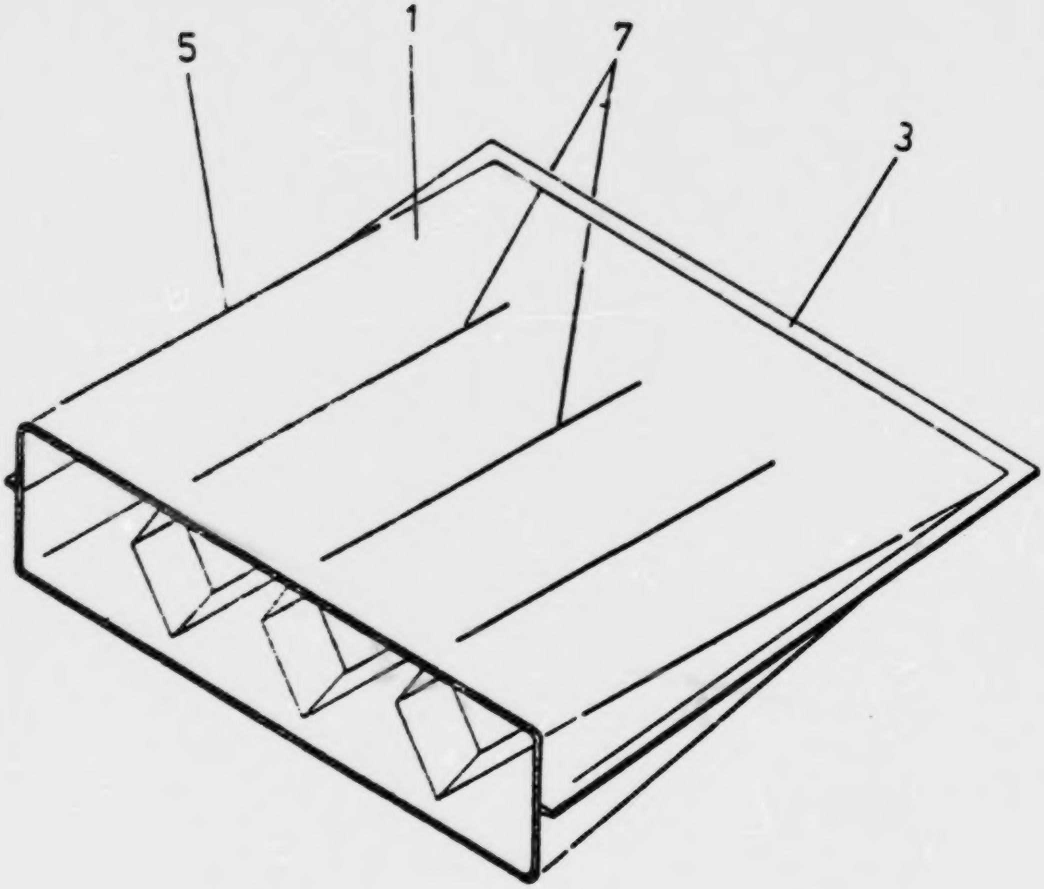


FIG.1

BEST COPY AVAILABLE

7

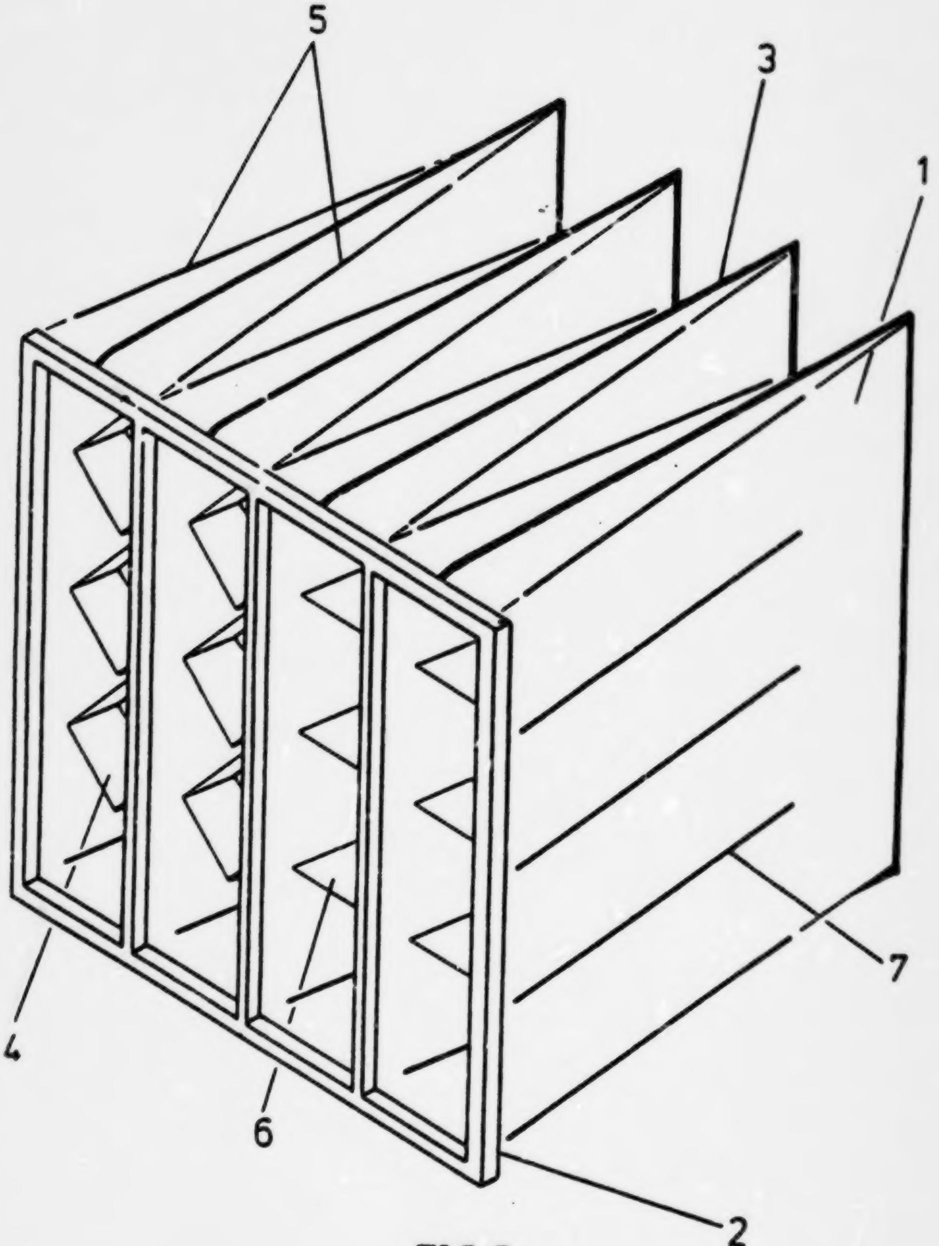


FIG.2

BEST COPY AVAILABLE

8

BEST COPY AVAILABLE

GAS FILTER ELEMENT

BACKGROUND

The invention relates to a gas filter element.

Such filters are used for the separation of floating particles from an air stream such as the air entering ventilating or air conditioning equipment or being recirculated thereby.

For the purpose of separating dust from an air stream it is known to use filter units containing as the filtering medium nonwoven mats of glass or textile fibers. It is advantageous for such nonwoven mats to be used in stiff supporting lattice designs known as high surface area filter units, in which the edges of the pieces of mat inserted in a V-shaped configuration are clamped to the holder in a dust-tight manner by appropriately shaped grids. A filter of this kind is described, for example, in German Petty Pat. No. 6,908,374. Due to the stiff mounting of the filter media, such high surface area filter designs have particularly good characteristics with regard to degree of dust separation, dust holding capacity and dust adhesion. Their use, however, is uneconomical inasmuch as the mountings are very expensive. Furthermore, the relatively great amount of time required for the replacement of the dust-filled pieces of matting with clean ones constitutes a disadvantage. Furthermore, in all such filter elements considerable difficulty is involved in making sure that the installed mat sections are joined together in a dust-free manner along the edges, for otherwise dust leaks can occur.

In recent times filter elements have become known which have an externally similar configuration while dispensing with stiff supporting structures.

For the manufacture of such a filter element from cut-to-shape pieces of glass fiber or textile fiber matting, such pieces have heretofore been assembled by sewing, cementing or spot welding to form the actual filter pockets. Various numbers of these filter pockets are joined removably or irremovably to a front mounting frame. The element is commonly used as a ready-assembled unit. Such filter elements have not, however, been widely used. The individual filter pockets balloon under operating conditions, resulting in irregular distribution of the flow on the active filter surfaces. Fluttering occurs, and this results not only in an unsatisfactory separation of dust particles but also the danger of damage to the filter pockets as well as the danger of contamination of the filtered air by the filter fibers. It has furthermore been found that the known outer stitching of the seams gathers the edges of the mats imperfectly, so that edge piping must be provided to protect them. In addition--especially in the case of fine and ultra-fine filter elements--the unavoidable holes created by the penetration of the needles have to be cemented shut by expensive hand operations.

To prevent the filter pockets of an element from touching one another when they balloon under operating conditions, thereby impairing their efficiency, a variety of methods has been used to restrain the ballooning action, but none of them has been entirely satisfactory. When the opposite sides of the filter pocket are joined directly to one another by tack stitching or continuous stitching, the areas where the sides are joined to one another are compressed together, and this reduces the effective filter area, even though each pocket is prevented from ballooning against the adjacent pocket. Furthermore, the flow of air into the pockets is reduced and the resistance of the element to the passage of air is increased.

Where the method of joining together the opposite sides of the filter pocket leaves space between the opposite seams, better conditions are achieved with regard to air flow, but there are other disadvantages: if the sides of the filter pocket are tied together spot-wise, any fluttering or vibrational movements between them will threaten to tear them away from each other at the points where they are attached. To prevent this, gores have been sewn between the sides of the filter pocket, i.e., triangular pieces of fabric are sewn between the sides of the filter pocket from the mouth to the bottom thereof, with the apex of the triangle at the bottom of the pocket. The disadvantage of this method of stitching is the great amount of time required for the sewing operation and for the subsequent gluing or sealing shut of the perforations made by the needle. Also, at the apex or bottom end of the pocket, there is a decided reduction of the active filter surface.

THE INVENTION

The invention is addressed to the problem of developing a pocket filter element which will equal the solid, high-surface-area filter as regards degree of dust removal and dust holding capacity while avoiding the disadvantages mentioned above.

This problem is solved in accordance with the invention by a gas filter element consisting of a holding frame 2 and a plurality of wedge-shaped filter pockets permanently attached to this frame, characterized in that the pockets have self-supporting properties in the air stream due to a trimmed, welded or fused seam joining together the parts of each pocket, plus spacing members made of flat material and attached by fusion in line with the direction of air flow, and, if desired, additional stiffening means affixed by fusion, the upstream edges of the pockets being affixed continuously and permanently to the holding frame which is of streamlined cross section, the holding frame consisting of hard foam material which is joined to the filter material of the pocket by foaming in place.

In a further development of the invention, the spacing members of the wedge-shaped filter pockets, which are attached to the pockets by welding or cementing, are made of a flexible sheet material and have additional stiffening means at the seams.

In still another development, the spacing members are made of sheet material formed into a tube of lozenge-shaped cross section, i.e. pyramidal or truncated pyramidal shapes; these tubes taper from the mouth to the end and are open or closed at their apex, and they do not reach all the way to the mouth of the pocket.

In another development, the pockets are provided with stiffening ribs additionally provided by welding.

The invention will now be further described with reference to the accompanying drawings, wherein:

FIG. 1 is a perspective view of a filter pocket in accordance with the invention; and

FIG. 2 is a perspective view of a filter element in accordance with the invention made up of two filter pockets as shown in FIG. 1, two slightly modified pockets and a holding frame for all four pockets.

Referring now more particularly to FIG. 1, the filter pocket is wedge-shaped and comprises a pair of substantially symmetrical pocket halves secured to one another as by fusion along the line 3. Each pocket half is formed of gas permeable filter material and, if the filter material has a preferential direction for placement in a gas stream, it is placed for the gas to flow from inside the pocket to the outside of the pocket.

For the achievement of further stiffening, and also to optimize conditions for the flow of air or gas into the interior of the pockets, a number of spacing members of lozenge-shaped cross section 4, made of nonwoven fabric, sheet material or woven fabric, varying in number according to the quality of the filter medium and its resistance to air flow, are cemented or welded in place at 7, and additional stiffening ribs 5 are provided by local welding of the filter medium. The use of bag-like inserts of lozenge-shaped cross section as spacing members has proven to be especially advantageous for the stabilization of the filter pockets against fluttering in the air stream. However, single flat spacing inserts 6 can also be used in accordance with the invention, as shown in FIG. 2.

As also seen in FIG. 2, a plurality of filter pockets are held together into a unit or element by a molded holding frame 2 which desirably is made of plastic foamed in place so as to embed the perimeters of the mouths of the pockets comprising the element.

The advantages achieved by the filter element of the invention consist especially in the fact that its use permits a quick replacement of the filter by untrained personnel, while providing assurance against dust leakage. The filter pockets have no tendency to flutter, and the performance of the filter element equals that of solid, high-surface-area filters as regards dust removal and accumulation.

The filter materials per se are known and desirably comprise non-woven fiber battings held together by bonding but not sufficiently stiff to be self-supporting. The fibers may comprise any normally employed, either continuous filaments or staple fibers and desirably, at least in part, they are fusible, i.e. can be caused to become adhesive by heat or application of a solvent, e.g. nylon, polyester, olefin, acrylic, acetate, and the like. If no fusible fibers are present then the requisite adhesion and stiffening can be effected by conventional adhesives, e.g. polyvinyl acetate latices, etc.

It will be appreciated that the instant specification and examples are set forth by way of illustration and not limitation, and that various modifications and changes may be made without departing from the spirit and scope of the present invention.

What is claimed is:

1. A gas filter element comprising a holding frame and at least one self-supporting wedge-shaped filter pocket each having its wide end open and secured to said frame, each filter pocket comprising a pair of substantially symmetrical pocket halves formed of fusible fibers and welded to one another along the wedge edge and centrally along the opposite wedge end faces and at least one laminar spacing element disposed within the pocket and extending from adjacent the open end toward the wedge edge, the spacing element being welded to the opposite inclined wedge faces, the filter pocket being rendered self-supporting by the welding of the pocket halves to one another and the welding of the spacing element to the pocket.

2. A filter element according to claim 1, including a plurality of spacing elements within each pocket, and spaced from the open mouth and the wedge edge.

3. A filter element according to claim 1, wherein the filter pocket comprises fusible fibers, the pocket halves being welded to one another by fusion and the spacing element being welded to the pocket by fusion.

4. A filter element according to claim 1, wherein the remaining wedge edges are also stiffened by fusion.

5. A filter element according to claim 1, wherein the spacing elements are flat in shape extending from one inclined wedge face to the other.

6. A filter element according to claim 1, wherein the spacing elements are pyramidal in shape and welded to the opposite inclined wedge faces along opposite longitudinal edges of the pyramid.

7. A filter element according to claim 1, including a plurality of additional stiffening lines in each inclined wedge face extending from adjacent the open end toward the wedge edge.

8. A filter element according to claim 1, including a plurality of filter pockets held in fixed position relative to one another by the single holding frame comprising a molded plastic mass in which the open end perimeters of the pockets are embedded.

9. A filter element according to claim 2, including a plurality of spacing elements within each pocket and spaced from the open mouth and the wedge edge, each filter element comprising fusible fibers, the pocket halves being welded to one another by fusion and the spacing elements being welded to the pockets by fusion, the remaining wedge edges also being stiffened by fusion, and each filter pocket further including a plurality of additional stiffening lines in each inclined wedge face extending from adjacent the open end toward the wedge edge, said additional stiffening lines coinciding with the fusion lines of the spacing elements to the pockets.

* * * * *

BEST COPY AVAILABLE

Certified Copy of Re-examination Certificate

for U.S. Patent No. 4,056,375

(12-80)

U. S DEPARTMENT OF COMMERCE
United States Patent and Trademark Office

B.

February 6, 1987
(Date)

HIS IS TO CERTIFY that the annexed is a true copy from the records of this office

U.S. Reexamination Certificate (623rd), B1 4,056,375.

By authority of the
COMMISSIONER OF PATENTS AND TRADEMARKS

G. P. Rorsey
Certifying Officer.

BEST COPY AVAILABLE

12

REEXAMINATION CERTIFICATE (623rd)

United States Patent [19] [11] **B1 4,056,375**

Ringel et al. [45] Certificate Issued Jan. 20, 1987

[54] **GAS FILTER ELEMENT**

[75] Inventors: Wolfgang Ringel, Morlenbach; Peter Rutsch, Abtsteinach; Rolf Schneider, Weinheim; Edgar Kohl, Abtsteinach, all of Fed. Rep. of Germany

[73] Assignee: Firma Carl Freudenberg, Weinheim an der Bergstrasse, Fed. Rep. of Germany

Reexamination Request:
No. 90/001,035, Jun. 19, 1986

Reexamination Certificate for:
Patent No.: 4,056,375
Issued: Nov. 1, 1977
Appl. No.: 720,327
Filed: Sep. 3, 1976

[30] **Foreign Application Priority Data**

Sep. 17, 1975 [DE] Fed. Rep. of Germany 2541331

[51] Int. Cl.⁴ B01D 46/02; B01D 29/10
[52] U.S. Cl. 55/381; 55/483; 55/500; 55/514; 55/521; 55/528; 210/493.1; 210/497.3
[58] Field of Search 55/378, 379, 381, 382, 55/483, 484, 497–499, 500, 521, 514, 528; 210/493.1, 497.3, 323.1

[56] **References Cited**

U.S. PATENT DOCUMENTS

1,363,753	12/1920	Quinn .	
2,364,069	12/1944	Hahn .	
2,569,243	9/1951	Kovacs .	
2,853,154	9/1958	Rivers .	
3,099,547	7/1963	Hagendoorn .	
3,183,285	5/1965	Boylan .	
3,190,059	6/1965	Bender .	
3,360,120	12/1967	Getzin .	
3,386,231	6/1968	Nutting	55/484
3,422,602	1/1969	Janson	55/484

FOREIGN PATENT DOCUMENTS

599661	6/1960	Canada .
1700147	4/1954	Fed. Rep. of Germany .
1728676	11/1954	Fed. Rep. of Germany .
1731352	5/1956	Fed. Rep. of Germany .
1944619	8/1966	Fed. Rep. of Germany .
69083374	2/1969	Fed. Rep. of Germany .
1432013	10/1969	Fed. Rep. of Germany .
1607665	6/1970	Fed. Rep. of Germany .
7140425	10/1971	Fed. Rep. of Germany .
1407932	3/1972	Fed. Rep. of Germany .
2104675	8/1972	Fed. Rep. of Germany .
2137309	2/1973	Fed. Rep. of Germany .
2166432	1/1974	Fed. Rep. of Germany .
2343435	3/1975	Fed. Rep. of Germany .
1296701	5/1962	France .
1509054	12/1967	France .
806109	12/1958	United Kingdom .
1367226	9/1974	United Kingdom .

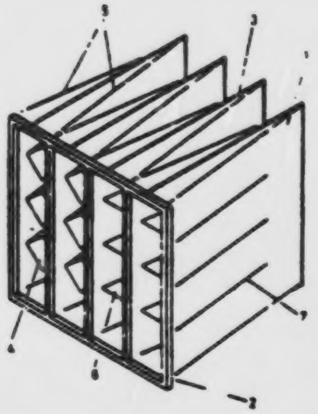
OTHER PUBLICATIONS

Product Bulletin Hi-Cap 90/35 and Hi Cap 80/25, Camfil GmbH (1978).

Primary Examiner—Bernard Nozick

[57] **ABSTRACT**

A gas filter element comprising a holding frame and a plurality of self-supporting wedge-shaped filter pockets each having its wide end open and secured to said frame, each element comprising a pair of substantially symmetrical pocket halves secured to one another along the wedge edge and centrally along the opposite wedge end faces, and a plurality of laminar spacing elements with each pocket extending from adjacent the open end toward the wedge edge, each spacing element being secured to the opposite inclined wedge faces, each filter pocket being rendered self-supporting by the securing of the [illegible] elements to one another and the securing of the [illegible] elements to the pocket. Advantageously the filter [illegible] each comprises fusible fibers, the pocket halves being joined to one another by fusion and the spacing elements being secured to the pocket by fusion. The remaining wedge edges also may be stiffened by fusion and additional stiffening lines may be provided in each inclined wedge face extending from adjacent the open end toward the wedge edge.



BEST COPY AVAILABLE

REEXAMINATION CERTIFICATE ISSUED UNDER 35 U.S.C. 307

NO AMENDMENTS HAVE BEEN MADE TO THE PATENT

AS A RESULT OF REEXAMINATION, IT HAS BEEN DETERMINED THAT:

The patentability of claims 1-9 is confirmed.

* * * * *

14

C.

Certified Assignments of
U.S. Patent No. 4,056,375

15

88 (12-80)

U. S DEPARTMENT OF COMMERCE
United States Patent and Trademark Office

June 17, 1987
(Date)

THIS IS TO CERTIFY that the annexed is a true copy from the records of this office

of a Document recorded June 9, 1987.

By authority of the
COMMISSIONER OF PATENTS AND TRADEMARKS

Duane G. Russell
Certifying Officer.

LYNCH, 805 Third Avenue, N.Y., N.Y. 10022 Tel. (212) 688-920

BEST COPY AVAILABLE

ASSIGNMENT

Whereas the undersigned "ASSIGNOR" is the owner by Assignment of the entire right, title and interest in an invention in GAS FILTER ELEMENT for which U.S. Patent No. 4,056,375 issued on November 1, 1977;

Whereas
(Name and address
of Assignee)

Freudenberg Nonwovens
Limited Partnership
20 Industrial Avenue
Chelmsford, Massachusetts 01824

a Massachusetts Limited Partnership is desirous of acquiring the entire right, title and interest in the same:

Now, therefore, in consideration of the sum of one dollar ($1.00), the receipt whereof is hereby acknowledged, and other good and valuable consideration, the said ASSIGNOR hereby sells, assigns and transfers unto said ASSIGNEE, the full and exclusive right to the said invention in the United States and the entire right, title, and interest in and to U.S. Patent No. 4,056,375 issued on November 1, 1977, said assignment to be in full force and effect as of January 5, 1987, and to fully enable the assignee to seek legal redress and to recovery damages, and to otherwise seek compensation for any and all acts of infringement which may have occurred after that date as well as to seek legal redress and to recovery damages, and to otherwise seek compensation for any and all acts of infringement which may have occurred prior to that date.

Witness, the hand and seal of the ASSIGNOR on the date(s) indicated.

REEL 4701 FRAME 306

Firma Carl Freudenberg
Weinheim an der Bergstrasse
Federal Republic of Germany

By ________________________

ppa Dr. Martin Greif ppa Dr. Helga Weissenfeld-Richter
Prokurist Prokuristin
(Title)

March 30, 1987
(Date)

RECORDED
PATENT & TRADEMARK OFFICE

JUN -9 1987

COMMISSIONER OF PATENTS
AND TRADEMARKS

FELFE & LYNCH, 805 Third Avenue, N.Y., N.Y. 10022 Tel. (212) 688-9200

BEST COPY AVAILABLE

PTO 55 (12-80)

U. S DEPARTMENT OF COMMERCE
United States Patent and Trademark Office

June 24, 1987
(Date)

THIS IS TO CERTIFY that the annexed is a true copy from the records of this office of a Document recorded September 3, 1976.

By authority of the
COMMISSIONER OF PATENTS AND TRADEMARKS

Diane G. Russell
Certifying Officer.

BEST COPY AVAILABLE

18

ASSIGNMENT

In consideration of One Dollar ($1.00) in hand paid and other good and valuable considerations, the receipt of which is hereby acknowledged, the undersigned [hereinafter (collectively) named "Assignor"] hereby assigns and transfers to

Name of Assignee

Firma Carl Freudenberg
6940 Weinheim/Bergstr.
Hohnerweg 2
Germany

Place of Assignee's Incorporation:

, a German corporation (hereinafter named "Assignee"), its successors, legal representatives and assigns, the entire right, title and interest in and to Assignor's application for Letters Patent of the United States, executed concurrently herewith unless otherwise indicated herein, entitled

Title of Application:

GAS FILTER ELEMENT

and to Assignor's entire right, title and interest in any and all inventions, whether joint or sole, disclosed in said application for Letters Patent, and in any and all divisional or continuation or renewal applications that may be filed for United States Letters Patent for any and all of said inventions, and in and to any and all patents that may be granted on the foregoing applications and any reissue or extension thereof, and in any and all improvements thereon or relating thereto which the Assignor has invented or may hereafter invent.

The Assignor hereby authorizes and requests the Commissioner of Patents to issue any and all of said Letters Patent to said Assignee.

For said consideration, the Assignor hereby agrees upon the request of said Assignee, its successors, legal representatives or assigns, to execute any and all United States divisional, continuation and renewal applications for said invention or improvements, and any and all necessary oaths, supplemental oaths or declarations or supplemental declarations or affidavit relating thereto, and any application for the reissue or extension of any United States Letters Patent that may be granted upon said application that said Assignee, its successors, legal representatives or assigns may deem necessary or expedient.

For the said consideration the Assignor further agrees upon the request of said Assignee, its successors, legal representatives or assigns, in the event of said application or any division thereof, or Letters Patent issued thereon or any reissue or application for the reissue thereof, becoming involved in interference, to cooperate to the best of the ability of the Assignor with said Assignee, its successors, legal representatives or assigns in the matters of preparing and executing the Preliminary Statement and giving and producing evidence in support thereof, the Assignor hereby agreeing to perform upon such request, any and all affirmative acts necessary to obtain said Letters Patent and vest all rights herein hereby conveyed in said Assignee, its successors, legal representatives or assigns as fully and entirely as the same would have been held and enjoyed by the Assignor if this assignment and sale had not been made.

Assignor hereby binds himself, his heirs, legal representatives, administrators, and assigns properly to execute without further consideration, any and all applications, petitions, oaths, assignments or other papers and instruments which may be necessary in order to carry into full force and effect the sale, assignment and transfer hereby made, or intended or agreed to be made.

Note: This paragraph to be crossed out if not applicable

And for said considerations, the Assignor hereby assigns to said Assignee, its successors, legal representatives and assigns, the entire right, title and interest in said invention or improvement for any and all foreign countries and agrees upon the request of said Assignee, its successors, legal representatives or assigns to execute any and all documents that shall be required of the Assignor to be executed in connection with any and all applications for foreign Letters Patent therefor, including the prosecution thereof, and to execute any and all documents necessary to invest title in said foreign applications and patents in said Assignee, its successors, legal representatives or assigns.

Witness, the hand and seal of the Assignor this 23 day of August, 1976.

Wolfgang Ringel (L.S.)
Wolfgang Ringel

(L.S.)
Peter Kusch

Rolf Schneider (L.S.)
Rolf Schneider

(L.S.)
Edgar Kohl

RECORDED
U.S. PATENT OFFICE
SEP - 3 1976
C. Marshall Dann

3339 FRAME 742

BEST COPY AVAILABLE

CERTAIN NONWOVEN GAS
FILTER ELEMENTS

337-TA-275

CERTIFICATE OF SERVICE

I, Kenneth R. Mason, hereby certify that the attached LIMITED EXCLUSION ORDER AND NOTICE OF ISSUANCE OF LIMITED EXCLUSION ORDER was served upon Phyllis Smithey and upon the following parties via first class mail, and air mail where necessary, on August 26, 1988.

Kenneth R. Mason

Kenneth R. Mason, Secretary
U.S.International Trade Commission
500 E Street,S.W.
Washington, D.C. 202436

Counsel for Complainant FREUDENBERG NONWOVENS LIMITED PARTNERSHIP:

F. David Foster
ABLONDI & FOSTER, P.C.
1776 K Street, N.W.
Washington, D.C. 20006

FELFE & LYNCH
805 Third Avenue
New York, New York 10022

For Respondent Filtrair, B.V. and APB Corporation:

John J. Byrne
Bradford E. Kile
Kevin M. O"Brien
Francisco J. Cimadevilla
BAKER & MCKENZIE
815 Connecticut Avenue, Northwest
Washington, D.C. 20006

GOVERNMENT AGENCIES:

Mr. Charles S. Stark
Antitrust Div./U.S. Dept of Justice
Room 7115, Main Justice
Pennsylvania Avenue & Tenth Street, N.W.
Washington, D.C. 20530

Edward F. Glynn, Jr., Esq.
Assistant Director(International)
Bureau of Competition
Federal Trade Commission
Room 2636
601 Pennsylvania Avenue, N.W.
Washington, D.C. 20580

Darrel J. Grinstead, Esq.
Dept of Health and Human Svcs.
Room 5362, North Building
330 Independence Avenue, S.W.
Washington, D.C. 20201

Michael T. Schmitz
Chief Counsel
U.S. Customs Service
1301 Constitution Avenue, N.W.
Washington, D.C. 20229

RECEIVED

88 SEP 2 P3:51

OFFICE OF THE SECRETARY
USITC

UNITED STATES INTERNATIONAL TRADE [illegible]
Washington, D.C. 20436

In the Matter of

CERTAIN NONWOVEN
GAS FILTER ELEMENTS

Investigation No. 337-TA-275

COMMISSION OPINION ON REMEDY, THE PUBLIC INTEREST, AND BONDING

Background

This investigation was initiated to determine whether there is a violation of section 337 of the Tariff Act of 1930 (19 U.S.C. § 1337) in the importation or sale of certain nonwoven gas filter elements from Holland. The subject imports were accused of infringing claims 1-4 and 6-9 of U.S. Letters Patent 4,056,375 ("the '375 patent") with an effect and tendency to destroy or substantially injure an efficiently and economically opera[illegible] domestic industry. The patent owner, Freudenberg Nonwovens Limited Partnership ("Freudenberg"), is the complainant. The respondents are Filtrair, B.V. ("Filtrair"), the Dutch manufacturer of the subject gas filter elements, and APB Corporation ("APB"), the U.S. importer and distributor of the subject gas filter elements. 1/

1/ See 52 Fed. Reg. 32182 (Aug. 26, 1987) as amended by 52 Fed. Reg. 44234 (Nov. 18, 1987).

BEST COPY AVAILABLE

22

During this investigation, the presiding administrative law judge issued initial determinations ("IDs") holding that the imported gas filter elements infringe claims 1-3 and 6-8 of the '375 patent and that there is an effect or tendency to substantially injure an efficiently and economically operated domestic industry. 2/ By determining not to review those IDs, the Commission adopted them and thus determined that the unauthorized importation or sale of the accused gas filter elements violates section 337. 3/

The issues before us now are the following: (1) the appropriate remedy for the violation found to exist; (2) whether the public interest precludes such relief; and (3) the amount of the bond under which the imported articles will be permitted to enter the United States during the Presidential review period provided for in subsection (j) of section 337, as amended by section 1342(a)(5)(A) of the Omnibus Trade and Competitiveness Act of 1988 ("the Omnibus Trade Act"). 4/ The Commission solicited written submissions from the

---

2/ See Initial Determination: Order No. 13 (Mar. 1, 1988) ("ID on the Economic Issues"); Errata to Order No. 13 (Mar. 2, 1988) ("Errata to ID on the Patent Issues"); Initial Determination (May 26, 1988) ("ID on the Patent Issues").

3/ See former 19 C.F.R. § 210.53(h) (which has since been repromulgated as interim § 210.53(h) of the Commission's Rules of Practice and Procedure) ("the Commission's Rules") (53 Fed. Reg. 33043, 33053, and 33070, Aug. 29, 1988); 53 Fed. Reg. 12200 (Apr. 13, 1988) (notice of Commission decision not to review ID on the Economic Issues); 53 Fed. Reg. 27408 (June 20, 1988) (notice of Commission decision not to review ID on the Patent Issues).

4/ See 19 U.S.C. § 1337(d); 19 U.S.C. § 1337(f), as amended by section 1342(a)(4)(A) of the Omnibus Trade and Competitiveness Act of 1988 ("the Omnibus Trade Act"); 19 U.S.C. § 1337(j)(3), as amended by sections 1342(a)(5)(A) and (b)(3) of the Omnibus Trade Act; interim § 210.58(a)(1), (2), (3), and (4) of the Commission's Rules (53 Fed. Reg. 33043, 33053-54, and 33072, Aug. 29, 1988).

parties, other Federal agencies, and interested members of the public on the foregoing issues. 5/ The only submissions the Commission received were those filed by the parties. 6/

For the reasons discussed below, we determine that (1) the appropriate remedy is a limited exclusion order under subsection (d) of section 337, 7/ (2) the public interest considerations outlined in susbsection (d) of section 337 do not preclude such relief, and (3) the amount of the bond shall be 12 percent of the entered value of the articles to be excluded.

Remedy

General Exclusion

When a violation of section 337 has been found, subsection (d) of section 337 authorizes the Commission to issue an order prohibiting the subject imports from entering the United States (provided that public interest

---

5/ See 52 Fed. Reg. 27408 (June 20, 1988); interim § 210.58(a)(2) of the Commission's Rules (53 Fed. Reg. 33043, 33053 54, and 33072, Aug. 29, 1988).

6/ Complainant's Submission on Remedy, Bonding, and the Public Interest (July 21, 1988) ("Complainant's Submission"); Brief of the Commission Investigative Staff on Remedy, Bonding, and the Public Interest (July 21, 1988) ("IA's Brief"); Submissions of Respondents Filtrair, B.V., and APB Corporation on the Issues of Remedy and Public Interest (July 21, 1988) ("Respondents' Submission"); Complainant's Reply Submission on Remedy, Bonding, and the Public Interest (July 28, 1988) ("Complainant's Reply Submission"); Reply Brief of the Commission Investigative Staff on Remedy, Bonding, and the Public Interest (July 28, 1988) ("IA's Reply Brief"); Reply of Respondents Filtrair, B.V., and APB Corporation to the Submissions Made by the Complainant and the Commission Investigative Staff on the Issues of Remedy and Public Interest (July 28, 1988) ("Respondents' Reply Submission").

7/ Commissioner Liebeler determined that the appropriate remedy consists of a limited exclusion order along with a cease and desist order. See infra n.30.

considerations do not preclude such relief). 8/ Two types of exclusionary relief are available: (1) a general exclusion order covering all infringing imports, regardless of the identity of the foreign manufacturer or exporter, or (2) a limited exclusion order covering infringing merchandise of certain named respondents.

Before a general exclusion order may be issued, the criteria first articulated in Investigation No. 337-TA-90, Certain Airless Paint Spray Pumps and Components Thereof, must be satisfied. 9/ Those criteria are (1) a widespread pattern of unauthorized use of the patented invention and (2) business conditions from which one might reasonably infer that foreign manufacturers other than the respondents to the investigation may attempt to enter the U.S. market with infringing articles. 10/ The existence of a widespread pattern of unauthorized use may be established by the following: (1) a Commission determination of unauthorized exportation to the United States of infringing articles by numerous foreign manufacturers; (2) the pendency of foreign infringement suits based upon foreign patents which correspond to the domestic patent in issue; and (3) other evidence which demonstrates a history of unauthorized foreign use of the patented invention. 11/ The existence of appropriate business conditions may be shown by: (1) an established demand for the patented product in the U.S. market and

---

8/ 19 U.S.C. § 1337(d).

9/ USITC Pub. No. 1199 at 17-19 (Nov. 1981).

10/ Id. at 18.

11/ Id. at 18-19.

conditions of the world market; (2) the availability of marketing and distribution networks in the United States for potential foreign manufacturers; (3) the cost to foreign entrepreneurs of building a facility capable of producing the patented article; (4) the number of foreign manufacturers whose facilities could be retooled to produce the patented article; or (5) the cost to foreign manufacturers of retooling their facility to produce the patented article. 12/

Complainant Freudenberg and the Commission investigative attorney ("the IA") have stated that the record in the present investigation does not contain the requisite facts and evidence to support the issuance of a general exclusion order. 13/ We agree.

There is no evidence of a widespread pattern of unauthorized use of the patented invention. Respondent Filtrair is the only known foreign source of the infringing gas filter elements, 14/ and the record contains no evidence of pending foreign infringement suits involving foreign patents that correspond to the '375 patent. 14a/ It also does not appear that business conditions are such that foreign manufacturers other than Filtrair may attempt to enter the U.S. market with infringing articles. The patented gas filter elements are highly specialized products manufactured by a sophisticated process involving

---

12/ Id. at 19.

13/ See Complainant's Submission at 2; IA's Brief at 3-6.

14/ See ID on the Patent Issues at 56-57.

14a/ Complaint at paragraph 26.

relatively expensive technology. 15/ We find that complainant Freudenberg has sufficient production capacity to satisfy domestic demand for the patented products. 16/ The record also shows that competitive, noninfringing gas filter elements of other types are available. 17/ A general exclusion order thus is is not warranted in this investigation.

Limited Exclusion

Having determined that the unlicensed importation and sale of the subject gas filter elements violates section 337, but having also found that the criteria for a general exclusion order are not satisfied, we determine that a limited exclusion order is the appropriate remedy. 18/ 19/ The only question is whether the limited exclusion order should cover all infringing imported nonwoven gas filter elements manufactured by or on behalf of respondent

---

15/ See, e.g., IA's Brief at 4; Complainant's Motion for Summary Determination on the Economic Issues at Exhibit 1 paragraph 4 and Exhibits 3 and 4 (Motion No. 275-4, Feb. 5, 1988) (this motion was not contested by respondents Filtrair and APB and was granted by the Commission in the ID on the Economic Issues); ID on the Patent Issues at findings of fact 12, 13, and 16-24; ID on the Economic Issues at 11.

16/ See Complainant's Motion for Summary Determination on the Economic Issues at Exhibit 1, paragraph 4, and Exhibit 3, paragraph 6.

17/ See, e.g., ID on the Patent Issues at 40-46, 54-55, and findings of fact 131, 132, 169, 182-186, 188-193, and 196-197.

18/ Facts and circumstances similar to one or more of those in the present investigation resulted in the issuance of a limited exclusion order in previous investigations. See, e.g., Certain High Intensity Retroflexive Sheeting, Inv. No. 337-TA-268, Commission Order at paragraph 1 and Commission Opinion on Remedy, Public Interest, and Bonding at 6 (July 15, 1988); Certain Dynamic Random Access Memories, Components Thereof, and Products Containing Same, Inv. No. 337-TA-242, USITC Pub. 2034 at 82-87 (Nov. 1987); Certain Headboxes and Papermaking Machine Forming Sections for the Continuous Production of Paper and Components Thereof, Inv. No. 337-TA-82A, USTIC Pub. 1197 (Nov. 1981) (order vacated on other grounds, 48 Fed. Reg. 32094 (July 13, 1983)).

Filtrair or whether it should be limited to the two Filtrair models that were found to be infringing. 20/

Respondents Filtrair and APB have argued that the order should be limited to the specific models the Commission found be to infringing and "in their respective forms as of the time of the investigation." Limiting the order in that fashion is appropriate, respondents argue, because nonwoven gas filter elements come in a wide variety of shapes, sizes, and materials, and the Commission should endeavor to minimize the possibility that lawful importations and sales of Filtrair gas filter elements that have not been found to infringe the '375 patent would be disrupted by an overly broad exclusion order. 21/

Complainant Freudenberg has urged the Commission not to limit the order in the manner advocated by Filtrair and APB, because doing so would facilitate circumvention of the remedial effect of the order. 22/

We agree with complainant Freudenberg. An exclusion order is intended to protect the patent owner's legal monopoly in the manufacture, use, and sale of the patented invention 22a/ by preventing importations of infringing

---

19/ See supra n.7.

20/ Those models are PPL/EU4 and PFL/EU5. The PFL/EU5 is the only infringing model that has been sold in the United States, but samples of PPL/EU4 have been imported for display purposes. See ID on the Patent Issues at 75-80, findings of fact 10, 211, 212, 257-260, 262, and 263; ID on the Economic Issues at 10-11.

21/ Respondents' Submission at 4; Respondents' Reply Submission at 3-4.

22/ Complainant's Reply Submission at 1-2.

22a/ See 35 U.S.C. §§ 261 and 271.

merchandise that have not been licensed by the patent owner. An exclusion order limited to the specific models that were found to be infringing would not be an effective remedy in this investigation. Circumvention of the order might be accomplished by changing the model designations of the infringing products and making slight modifications so that the products are no longer in the form they were in at the time of the investigation, but are nonetheless infringing. The limited exclusion order we have determined to issue is therefore not limited in the manner requested by Filtrair and APB.

As is customary, the limited exclusion order will cover infringing products manufactured abroad by or on behalf of the foreign respondent (Filtrair) or any of its successors, assigns, affiliated persons or companies, parents, subsidiaries, licensees, or other related business entities. 23/

Complainant Freudenberg is expected to provide whatever information and assistance Customs officials deem necessary to facilitate enforcement of the order.

Cease and Desist Order

Subsection (f) of section 337, as amended by the newly enacted Omnibus

---

23/ Filtrair's sales literature for the infringing gas filter elements states that Filtrair "is part of a specialized non wovens group formed in 1921 in the Netherlands employing 50, specializing in advanced non-woven synthetic fibre technology." Complaint at Exhibit 5 (bottom of the last page). The record also shows that Borkent B.V., a Dutch affiliate of Filtrair's, shares manufacturing facilities with Filtrair in Holland and produces there the nonwoven filter mat material used in Filtrair's products. Borkent B.V. sells the material to Filtrair; Filtrair then sends it to APB in the United States. See generally ID on the Economic Issues at 12 14; ID on the Patent Issues at 28 and findings of fact 6 and 45 51; Complaint at Exhibit 5. (The importation and sale of nonwoven mat material was neither alleged nor found to be an infringement of the '375 patent, however.)

Trade and Competitiveness Act of 1988 ("the Omnibus Trade Act") 24/, authorizes the Commission to issue an order directing persons found to be violating section 337 to cease and desist from engaging in the unfair methods or acts involved (as long as public interest considerations do not preclude such relief). 25/ The Omnibus Trade Act amendments to subsection (f) of section 337 clarify that a cease and desist order may be issued in lieu of or in addition to an exclusion order under subsection (d). 26/

In addition to requesting a limited exclusion order to halt future unlawful importations of the infringing Filtrair merchandise, complainant Freudenberg requested that the Commission issue an order directing domestic respondent APB to cease and desist from selling the infringing Filtrair merchandise in the United States. In support of that request, Freudenberg alleged that respondents have made recent sales of the infringing gas filter elements in the United States and that respondents have significant production capacity in Europe with which to make the infringing articles. Although there was no direct evidence that respondents are stockpiling the infringing merchandise, Freudenberg argued that the Commission should draw adverse inferences on that issue because Filtrair and APB failed to cooperate in discovery or to otherwise provide information relating to economic issues

---

24/ Pub. L. 100-418, 102 Stat. 1107 (signed by the President on Aug. 23, 1988).

25/ *See* 19 U.S.C. § 1337(f), as amended by section 1342(a)(4)(A) of the Omnibus Trade and Competitiveness Act of 1988 ("the Omnibus Trade Act").

26/ *Id*. *See also* section 2 of the Omnibus Trade Act; H.R. Rep. No. 40, 100th Cong., 1st Sess. 159-160 (1987); H.R. Rep. No. 576 at 636.

during the investigation. 27/

Respondents Filtrair and APB argued that they do not maintain substantial inventories of the infringing filter in the United States and that the estimated quantity which they do have on hand (reportedly no more than 250 filters) is intended to satisfy anticipated orders from existing U.S. customers and users of the subject products. 28/ The IA also opposed the issuance of a cease and desist order primarily because there is no evidence of stockpiling or substantial inventories of infringing articles in the United States and because the amount of money lost by complainant Freudenberg if the estimated 250 infringing gas filter elements are sold by respondents at Freudenberg's list price would be relatively insubstantial. 29/

We determine that a cease and desist order should not be issued. 30/ Our decision is based on the facts that there is no evidence of stockpiling or substantial inventories of infringing articles in the United States and that complainant Freudenberg has admitted, in effect, that respondents' sale of the estimated 250 infringing units alone would not be harmful. Complainant's Reply Submission on remedy, the public interest, and bonding states that

---

27/ See Complainant's Submission at 3-4; Complainant's Reply Submission at 2-5 and 14-15.

28/ See Respondents' Submission at 5; Respondents' Reply Submission at 3.

29/ IA's Reply Brief at 2-3. See also ID on the Economic Issues at 11.

30/ Commissioner Liebeler does not join this section of the opinion. She would have issued a cease and desist order in addition to the limited exclusion order in order to prevent the respondents from selling the infringing gas filter elements which they currently have in their inventory.

> If, in truth, Respondents "at most have only small inventory, not exceeding 250 filters, at its facility in Delaware", ... Complainant would accept a cease and desist order directed to any filters in the possession or control of Respondents in the United States other than the 250 filters Respondents presently claim to have in the United States. [Emphasis appears in the original.] 31/

Adverse inferences to support an affirmative finding on the question of whether respondents Filtrair and APB have stockpiled substantial inventories of the infringing gas filter elements would have been appropriate if all of the following circumstances had existed: (1) complainant Freudenberg had shown that it had attempted to obtain information on that issue (e.g., through specific discovery requests cited in its remedy submission); (2) the record contained no information whatsoever on the volume and value of the respondents' U.S. inventories; and (3) the paucity of information on those issues was due largely to respondents' failure to cooperate. We have declined to draw adverse inferences primarily because even though respondents Filtrair and APB failed to cooperate in the investigation of the economic issues, the record does contain some information pertaining to the issue of inventories, namely, the representations in respondents' remedy submission.

Complainant Freudenberg has questioned the veracity and candor of Filtrair's and APB's representations on the issue of infringing inventories. 32/ Freudenberg notes also that respondents Filtrair and APB have not made any representations concerning (1) the existence of additional filters that may be awaiting shipment to U.S. customers and (2) whether

---

31/ Complainant's Reply Submission at 2-3.

32/ Id.

respondents plan to import large additional quantities of infringing filter elements between now and the effective date of any exclusion order issued in this investigation. 33/

We decline to reject respondents' assertions on the volume of inventories. Regarding the possibility that Filtrair and APB might be intentionally misleading the Commission on the question of stockpiling to avoid the issuance of a cease and desist order, we note that the representations concerning the absence of substantial inventories were made in writing and signed by attorneys, who are subject to strict standards of professional responsibility and are presumed to be familiar with the Commission rule and the federal statutes pertaining to truth and veracity in all representations made to the Commission during these proceedings. 34/ However, if, after the investigation is terminated, complainant Freudenberg discovers evidence or information that (1) was not available when the issue of remedy was briefed before the Commission and (2) supports a finding or the

---

33/ Complainant's Reply Submission at 3; Complainant's Submission at 4.

34/ See Respondents' Submission at 5 and 10. When respondents filed their written submissions on remedy and the public interest, the relevant Commission rule was rule 201.8(e). It provides, in pertinent part, that the signature of a person signing a document filed with the Commission constitutes a certification that he has read the document and that to the best of his knowledge and information, the statements contained therein are true. 19 C.F.R. § 201.8(e). (The Commission has since adopted a more stringent rule which corresponds to the signing and certification provisions of Rule 11 of the Federal Rules of Civil Procedure. See interim rule 210.5(b) of the Commission's Rules (53 Fed. Reg. 33043, 33045, and 33056, Aug. 29, 1988).)

Section 1001 of title 18 of the United States Code provides as follows:

FOOTNOTE CONTINUED ON THE FOLLOWING PAGE.

inference that respondents Filtrair and APB have indeed stockpiled substantial inventories of the infringing merchandise (despite their representations to the contrary), complainant or the IA may petition for modification of the final Commission action in this investigation (i.e., denial of a cease and desist order) pursuant to interim Commission rule 211.57(a)(1). 35/

FOOTNOTE CONTINUED FROM THE PREVIOUS PAGE.

> **§ 1001. Statements or entries generally**
>
> Whoever, in any matter within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up by any trick, scheme, or device a material fact, or makes any false, fictitious or fraudulent statements or representations, or makes or uses any false writing or document knowing the same to contain any false, fictitious, or fraudulent statement or entry, shall be fined not more than $10,000 or imprisoned not more than five years, or both.

18 U.S.C. § 1001. See also 18 U.S.C. § 1621 regarding perjury generally.

35/ See 53 Fed. Reg. 33043, 33055, and 33076 (Aug. 29, 1988). If such a petition were filed and the Commission subsequently determined that Filtrair and APB had misled the Commission during the investigation or had provided false information on the question of stockpiled inventories, the Commission would consider (in addition to determining what action would be appropriate under rule 211.57(a)(1)) whether the matter should be referred to the U.S. Department of Justice. (See supra 18 U.S.C. §§ 1001, 1621, and 1622.) The Commission also would consider what Commission action, if any, should be taken against the attorneys who signed and filed the submission containing the false or misleading representations. (See, e.g., Commission rule 201.15(a), 19 C.F.R.§ 201.15(a).)

The Public Interest

Subsection (d) of section 337 provides that an exclusion order order may be issued "unless, after considering the effect of such exclusion upon the public health and welfare, competitive conditions in the U.S. economy, the production of like or directly competitive articles in the United States, and United States consumers, [the Commission finds that the order should not be issued]." 36/ The public interest is to paramount in the administration of section 337. 37/

Respondents Filtrair and APB have argued that certain aspects of the public interest preclude a remedy of any type in this investigation. Complainant and the IA have taken the opposite position. We have determined that the public interest does not preclude the issuance of a limited exclusion order in this investigation, for the reasons discussed below.

The Public Health and Welfare

The legislative history of section 337 indicates that "[t]he public health and welfare and the assurance of competitive conditions in the United States economy must be the overriding considerations in the administration of [section 337]." 38/

Complainant Freudenberg's submission on the public interest in this investigation pointed out that the patented gas filter elements are used for

---

36/ See 19 U.S.C. § 1337(d); interim rule 210.58(a)(1), (2), and (4) of the Commission's Rules (53 Fed. Reg. 33043, 33053-33054, and 33072, Aug. 29, 1988).

37/ See S. Rep. No. 1298, 93d Cong., 2d Sess. 193 (1974).

38/ Id. at 197.

35

air filtration in the production of many commercial products, particularly with respect to painting operations in automobile factories. 39/ We note, however, that the patented articles also have health-related or potentially health-affecting use applications. These include removal of dust from areas where a dust-free atmosphere is required in hospitals, laboratories, the food processing industry, and the pharmaceutical industry. 40/

The information on the record provides no basis, however, for a finding that the public health and welfare would be adversely affected by the proposed exclusion of respondents' infringing imports. As complainant Freudenberg correctly points out, the patented nonwoven gas filter elements do not have general implications for the public health and welfare of the sort involved in previous investigations in which a relief was denied on public interest grounds. 41/ 42/ Moreover, even though a Filtrair advertisement offers the

---

39/ Complainant's Submission at 7. (See also ID on the Patent Issues at finding of fact 205.)

40/ See Complaint at paragraph 9 and at Exhibit 5 (last page); ID on the Patent Issues at finding of fact 205.

41/ Complainant's Submission at 7; IA's Brief at 7-9.

42/ Compare the facts in the present investigation with the following cases: Certain Automatic Crank Pin Grinders, Inv. No. 337-TA-60, USITC Pub. 1022 at 17-21 (Dec. 1979) (permanent relief denied because of an overriding national policy in maintaining and increasing the supply of fuel efficient automobiles and because of complainant's inability to adequately supply domestic demand for the patented crank pin grinders); Certain Inclined Field Acceleration Tubes and Components Thereof, Inv. No. 337-TA-67, USITC Pub. 1119 at 21-31 (Dec. 1980) (permanent relief denied because there was an overriding public interest in continuing basic atomic research using the infringing imported acceleration tubes). See also Certain Fluidized Supporting Apparatus, Inv. No. 337-TA-182,

FOOTNOTE CONTINUED ON THE FOLLOWING PAGE.

infringing filter elements for use in hospitals and laboratories (among other places), 43/ there is no evidence that hospitals and laboratories which use the infringing filter elements in their air filtration systems would be harmed by exclusion of the infringing articles. The record shows that Filtrair's infringing articles are reproductions of the patented articles and that the infringing products are similar to the patented articles, as far as the end user is concerned. 44/ As noted above, we have concluded that complainant Freudenberg can supply all domestic demand for the patented nonwoven gas filter elements. 45/ Moreover, other types of competitive, noninfringing filter elements are available for domestic consumption. 46/

We therefore determine that the potential effect of a limited exclusion order on the public health and welfare is not such that the order should not be issued.

FOOTNOTE CONTINUED FROM THE PRECEDING PAGE.

USITC Pub. 1667 at 23-25 (Oct. 1984) (temporary relief denied because (1) complainant was unable to meet increasing domestic demand for the patented burn treatment apparatus within a commercially reasonable time, and (2) the patented apparatus had therapeutic benefits that were not available from other devices or methods of treatment, and decreased competition resulting from any remedy would have increased the price of the apparatus- a circumstance that would have effectively denied low income burn patients use of the patented apparatus).

43/ See Complaint at Exhibit 5 (last page).

44/ See ID on the Patent Issues at 56-57 and findings of fact 65 and 206-208; ID on the Economic Issues at 10 and 13; Complainant's Reply Submission at 3-4.

45/ See supra n.16.

46/ See supra n.17.

The Production of Like or Directly Competitive Articles

There is no indication that this aspect of the public interest would be adversely affected by the issuance of a limited exclusion order. As noted above, domestically produced, competitive, noninfringing filter elements are available for U.S. consumption. 47/ The production of such articles thus should not be harmed by exclusion of the infringing articles.

Competitive Conditions in the U.S. Economy and U.S. Consumers

As stated above, the legislative history of section 337 indicates that the assurance of competitive conditions in the United States economy (and the public health and welfare) must be the overriding considerations in the administration of section 337. 48/

Respondents Filtrair and APB have argued that no remedy should be ordered in this investigation because of the potential adverse effect upon U.S. consumers and competition. Specifically, Filtrair and APB argue that a remedy will (1) limit consumers in their choice of products and the quality thereof, (2) deprive U.S. air filter manufacturers of their supply of respondents' products, products which they have not been able to purchase from complainant, and (3) undermine longstanding market relationships Filtrair and APB have maintained with those manufacturers. 49/

Complainant and the IA have disputed those assertions. 50/

47/ *Id*.

48/ See *supra* n.38.

49/ See Respondents' Submission at 8-10 and Affidavit of Pieter K. Borkent.

50/ Complainant's Reply Submission at 10-14; IA's Brief at 7 and 9.

We concur with their position for the following reasons: Elimination of the unlicensed distribution and sale of the infringing articles will not deprive consumers of a unique product and unique technology, because the infringing articles are mere reproductions of the patented articles and respondents' infringing products are similar to the patented articles, as far as the end user is concerned. 51/ Complainant Freudenberg has sufficient capacity to satisfy domestic demand for the patented articles, 52/ and none of the companies which respondents claim will be harmed by deprivation of the infringing articles have come forward and made such assertions to the Commission. The record also does not support respondents' allegation that various American filter manufacturers extensively market the gas filter elements of respondents.

It thus does not appear that the issuance of a limited exclusion order will adversely affect U.S. consumers or competitive conditions in the U.S. economy.

Section 337 Relief for a Foreign-Owned Corporation

In conjunction with their position that the public interest would be adversely affected by the issuance of any remedy in this investigation, respondents Filtrair and APB argued that it would be inappropriate for the Commission to grant relief to Freudenberg under section 337, for the following reasons: (1) Freudenberg is a West German owned and West German-dominated corporation; (2) the validity of the '375 patent is questionable, as evidenced

---

51/ See supra n.44.

52/ See supra n.16.

by the fact that Freudenberg's application for a West German patent covering the same subject matter was denied and complainant allegedly has not been able to obtain a Dutch patent for the same invention; and (3) allowing Freudenberg to use the U.S. trade laws to exclude competition from Dutch imports in the U.S. marketplace would be contrary to the purpose and intent of section 337. 53/

The foregoing arguments are disputed by complainant and the IA. 54/

We reject the arguments of respondents Filtrair and APB for the following reasons. Filtrair and APB advanced essentially the same arguments in connection with the issue of patent enforceability while this investigation was before the administrative law judge. In the ID on the patent issues which the Commission adopted 55/, the '375 patent was found to be valid and enforceable. The ID on the patent issues also stated that discrimination against a section 337 complainant on the basis of its national origin (or the national origin of the inventors of the patent in controversy) would be contrary to Commission precedent and a recent decision by the U.S. Court of Appeals for the Federal Circuit holding that section 337 is nondiscriminatory and that the same rights are to be afforded to both domestic and foreign firms in section 337 proceedings. 56/ The question of complainant's standing to

---

53/ See Respondents' Submission at 6-9.

54/ See Complainant's Reply Submission at 5-9; IA's Reply Brief at 4.

55/ 53 Fed. Reg. 27408 (June 20, 1988).

56/ See ID on the Patent Issues at 80-82. The decision in question is Akzo N.V. v. U.S. International Trade Commission, 808 F.2d 1471 (Fed. Cir. 1986), cert. denied 107 S.Ct. 2490 (1987).

seek, and hence to receive, protection under section 337 was decided in the ID on the economic issues, which was also adopted by the Commission. 57/ The ID on the economic issues held that complainant's U.S. patent-based operations are an efficiently and economically operated domestic industry within the meaning of section 337 and that the importation and sale of the infringing filter elements has an effect or tendency to substantially injure that industry. 58/

Filtrair and APB's arguments concerning complainant's status as a foreign-owned corporation thus are not valid reasons for denying complainant relief under section 337.

Bonding

Under subsection (j) of section 337, articles subject to an exclusion order of section 337 are entitled to entry under a bond during the Presidential review period. 59/ The amount of the bond is to be determined by the Commission. 60/ In making that determinination, the Commission endeavors to ascertain what amount of bond is sufficient to offset any competitive advantages resulting from the unfair method of competition or unfair act

---

57/ 53 Fed. Reg. 12200 (Apr. 13, 1988).

58/ See ID on the Economic Issues at 4-7 and 8-14 and Errata to ID on the Patent Issues.

59/ See 19 U.S.C. § 1337(j)(3), as amended by sections 1342(a)(5)(A) and (b)(J) of the Omnibus Trade Act.

60/ Id.

enjoyed by persons benefitting from the importation. 61/

The IA argued that the bond should be be 11.9 percent of the entered value of the infringing articles. That figure was calculated by taking the difference between respondents' average sales price for the infringing model that has been sold in the United States 62/ and complainant Freudenberg's 1987 list price for the comparable patented Freudenberg model. 63/

Complainant Freudenberg argues that the bond should be 50 percent of the entered value of the infringing articles because (1) the actual pricing information on the record is limited because of respondents' refusal to cooperate in discovery; (2) judging by sales which respondent reportedly has made recently, it appears that the appproximately 12 percent price differential calculated from the limited pricing and sales data on the record may not reflect the full price differential which can be achieved by respondents, and (3) a multiple of four times the price differential calculated from the data on the record is warranted in order to ensure that the competitive advantage is eliminated from respondents' unlicensed importations and sales of infringing merchandise. 64/

We have determined that the amount of the bond shall be 12 percent of the entered value of the articles to be excluded. We adopted the IA's proposal, except that the amount was rounded off to 12 percent. We found the IA's

---

61/ See S. Rep. No. 1298 at 198; interim rule 210.58(a)(3) of the Commission's Rules (53 Fed. Reg. 33043, 33053, and 33072, Aug. 29, 1988).

62/ See supra n.20.

63/ See IA's Brief at 6-7.

64/ See Complainant's Submission at 4-6.

42

approach to be more consistent with Commission precedent than the approach advocated by complainant Freudenberg. 65/

65/ See, e.g., Certain High Intensive Retroflexive Sheeting, Commission Opinion and Order at 11-12 (July 15, 1988) (bond determined by computing the difference between 1987 average list prices for complainant's patented product and respondents' infringing product); Certain Foam Earplugs, Inv. No. 337-TA-184, USITC Pub. 1671 at 4 (Mar. 1985) (bond determined by considering difference in prices for sale of an infringing product and the sale of the domestic product when sold in equivalent quantities).

CERTAIN NONWOVEN GAS FILTER ELEMENTS Inv. No. 337-TA-275

Certificate of Service

I, Kenneth R. Mason, hereby certify that the attached COMMISSION OPINION ON REMEDY, THE PUBLIC INTEREST, AND BONDING, was served upon Phyllis Smithey, Esq., and upon the following parties via first class mail and air mail where necessary, on September 2, 1988.

Kenneth R. Mason

Kenneth R. Mason, Secretary
U.S. International Trade Commission
500 E Street, S.W.
Washington, D.C. 20436

Counsel for Complainant FREUDENBERG NONWOVENS LIMITED PARTNERSHIP:

F. David Foster
ABLONDI & FOSTER, P.C.
1776 K Street, N.W.
Washington, D.C. 20006

FELFE & LYNCH
805 Third Avenue
New York, New York 10022

For Respondent Filtrair, B.V. and APB Corporation:

John J. Byrne
Bradford E. Kile
Kevin M. O"Brien
Francisco J. Cimadevilla
BAKER & MCKENZIE
815 Connecticut Avenue, Northwest
Washington, D.C. 20006

GOVERNMENT AGENCIES:

Mr. Charles S. Stark
Antitrust Div./U.S. Dept of Justice
Room 7115, Main Justice
Pennsylvania Avenue & Tenth Street, N.W.
Washington, D.C. 20530

Edward F. Glynn, Jr., Esq.
Assistant Director(International)
Bureau of Competition
Federal Trade Commission
Room 2636
601 Pennsylvania Avenue, N.W.
Washington, D.C. 20580

Darrel J. Grinstead, Esq.
Dept of Health and Human Svcs.
Room 5362, North Building
330 Independence Avenue, S.W.
Washington, D.C. 20201

Michael T. Schmitz
Chief Counsel
U.S. Customs Service
1301 Constitution Avenue, N.W.
Washington, D.C. 20229

BEST COPY AVAILABLE

Initial Determination (Public Version)

By virtue of the Commission's decision not to review the attached initial determination, it became the final determination of the Commission concerning the patent issues presented in the subject investigation. See 19 C.F.R. § 210.53(h); 53 Fed. Reg. 12200 (April 13, 1988).

PUBLIC VERSION
UNITED STATES INTERNATIONAL TRADE COMMISSION
Washinton, D.C.

In the Matter of CERTAIN NONWOVEN GAS FILTER ELEMENTS	Investigation No. 337-TA-275

Initial Determination

Paul J. Luckern, Administrative Law Judge

Pursuant to the Notice to Investigation in this matter (52 Fed. Reg. No. 165 at 32182, August 26, 1987), this is the administrative law judge's initial determination under Commission Rule 210.53 (19 C.F.R. 210.53). The adminstrative law judge hereby determines, after a review of the record developed and coupled with the initial determination which issued on March 1, 1988, that there is a violation of section 337 of the Tariff Act of 1930, as amended (19 U.S.C. §1337) (section 337), in the unauthorized importation into, and sale in, the United States of certain nonwoven gas filter elements with the effect and tendency to substantially injure an industry, efficiently and economically operated in the United States.

APPEARANCES

FOR COMPLAINANT: FREUDENBERG NONWOVENS LIMITED PARTNERSHIP

Italo H. Ablondi
F. David Foster
ABLONDI & FOSTER, P.C.
1776 K Street, N.W.
Washington, D.C. 20006

Stephen B. Shear
Peter F. Felfe
FELFE & LYNCH
805 Third Avenue
New York, N.Y. 10022

FOR RESPONDENTS: FILTRAIR B.V. & APB CORPORATION

John Bryne
John W. Polk
Bradford E. Kile
Kevin M. O'Brien
Francisco J. Cimadevilla
BAKER & MCKENZIE
815 Connecticut Avenue, N.W.
Washington, D.C. 20006

FOR STAFF:

Juan Cockburn, Esq.

Issued: May 26, 1988

TABLE OF CONTENTS

PAGE

PROCEDURAL HISTORY 1 52

JURISDICTION 6 57

OPINION ON VIOLATION 6 57

- I. Validity and Enforecability of the '375 Patent 7 58
  - 1. Claims In Issue 9 60
  - 2. The '375 Patent Specification 10 61
  - 3. The '375 File Wrapper 13 64
  - 4. Reexamination of the '375 Patent 15 66
  - 5. 35 U.S.C. (102(b) 19 70
    - (a) RTX-006 As A Printed Publication 20 71
    - (b) Disclosure of RTX-006 .... 38 89
  - 6. 35 U.S.C. (103 .... 39 90
    - (a) Scope and Content of the Prior Art 41 92
    - (b) Differences Between the Prior Art and the Claims in Issue 46 97
    - (c) Level of Ordinary Skill in the Art 48 99
    - (d) Combining of References 49 100
    - (e) Objective Indicia of Nonobviousness (Secondary Considerations) 56 107
    - (f) Validity of the Claims In Issue 57 108
  - 7. 35 U.S.C. (112 .... 57 108
  - 8. 35 U.S.C. (116 .... 60 111
  - 9. Enforceability of the '375 Patent 74 125
- II. Infringement 75 126
- III. Respondents' Claim of Inequity 80 131

FINDINGS OF FACT

I. Jurisdiction 83 134

II. Parties and Products In Issue 83 134

III. The '375 Patent 85 136

IV. The '375 File Wrapper 93 144

V. Reexamination of the '375 Patent 98 149

VI. RTX-018 and RTX-006 .... 106 157

VII. Validity and Infringement 157 208

CONCLUSIONS OF LAW 233 284

INITIAL DETERMINATION AND ORDER 234 285

50

ABBREVIATIONS

C Post - Complainant's Post Hearing Brief

C Post R - Complainant's Post Hearing Rebuttal Brief

CPF - Complainant's Proposed Finding

CPX - Complainant's Physical Exhibit

CX - Complainant's Exhibit

FF - Findings of Fact

Pre Tr - Preliminary Conference Transcript

PreH Tr - Prehearing Conference Transcript

RPCL - Respondents' Proposed Conclusions of Law

RPF - Respondents' Proposed Findings of Fact

RPRFC - Respondents' Proposed Rebuttal Findings to the Complainant's Findings

RPRFS - Respondents' Proposed Rebuttal Findings to the Staff's Findings

R Post - Respondents' Post Hearing Brief

R Post R - Respondents' Post Hearing Rebuttal Brief

RPTX - Respondents' Physical Exhibit

RTX - Respondents' Documentary Exhibit

SPF - Staff's Proposed Finding

S Post - Staff's Post Hearing Brief

S Post R - Staff's Post Hearing Reply Brief

SX - Staff's Exhibit

Tr. - Transcript

PROCEDURAL HISTORY

On July 24, 1987 complainant Freudenberg Nonwovens Limited Partnership of Chelmsford, Massachusetts filed a complaint with the Commission under section 337, which complaint was supplemented on August 10, 1987. The complaint, as supplemented, alleged unfair methods of competition and unfair acts in the importation of certain nonwoven gas filter elements into the United States, and in their sale by reason of alleged infringement of U.S. Letters Patent 4,056,375 (the '375 patent). The complaint further alleged that the effect or tendency of the unfair methods of competition and unfair acts is to destroy or substantially injure an industry, efficiently and economically operated, in the United States.

On August 19, 1987, the Commission issued a notice of investigation (the notice) in which the scope of the investigation was defined as:

> ...[w]hether there is a violation of subsection (a) of section 337 in the unlawful importation of certain nonwoven gas filter elements into the United States, or in their sale by reason of alleged infringement of claims 1, 2, 3, 4, 7, 8, or 9 of U.S. Letters Patent 4,056,375, the effect or tendency of which is to destroy or substantially injure an industry, efficiently and economically operated, in the United States.[1]

The notice was published in the Federal Register on August 26, 1987 (52 Fed. Reg. No. 165, 32182).

The notice named the following respondents:

---

[1] The parties understood that the scope was directed to "claims 1, 2, 3, 4, 7, 8 and 9" (Pre Tr. at 7 to 9) and the administrative law judge so interpreted the scope.

Filtrair, B.V.
De Werf 16
P.O. Box 611
8440 AP Heerenveen
Holland

APB Corporation
One Commerce Center
Suite 300
P.O. Box 250
Wilmington, Delaware 19899

In this initial determination the respondents are collectively referred to as "respondents" or as "Filtrair". Complainant, as well as its corporate affiliate Firma Carl Freudenberg (FF 5), are referred to as "Freudenberg".

On October 14, 1987, an initial determination issued granting complainant's motion to amend the complaint and notice by the inclusion of claim 6 of the '375 patent. On November 9, the Commission determined not to review that initial determination which, pursuant to 19 CF.R §102.53(h), has become the final determination on that issue.

On March 1, 1988 an initial determination issued granting complainant's motion for summary determination that the importation and sale of respondents' nonwoven gas filter elements have the effect and tendency to substantially injure an efficiently and economically operated domestic industry, assuming there is proven an unfair act. As recited in that initial determination complainant and respondents stipulated that each of the claims in issue reads upon complainant's models F-45, T-60 and MF-85, 90 and 95 "Viledon" gas filter elements, and as found therein the F-45 and T-60 models are manufactured in Kentucky from 100% U.S. procured components and the three MF models are, and have been, wholly assembled in Kentucky since 1987. On April 1, the Commission determined not to review that initial determination thereby adopting it under Commission rules.

A prehearing conference was held, and the hearing commenced, on March 7, 1988. The hearing continued on March 8 and 9 and concluded on March 10.

Order No. 5 which issued on November 6, 1987 ordered that direct exhibits, including witness statements (direct testimony), were to be submitted by complainant and respondents by February 18, 1988 and the staff by February 22. On February 25 complainant objected to respondents' exhibit RTX-005 (direct examination witness statement of Joachim Richter) because the statement filed February 18 was in German without a translation and because the statement "apparently refers to an attachment which was not appended and also has not been supplied to date." Complainant argued that it had been agreed between complainant and respondents that a deposition of Richter would be deferred since it might develop that the averments of Richter in his witness statement RTX-005 would be of such character that the need for a deposition would be obviated, and that the Richter statement would be served on complainant by February 11 at the latest, one week prior to the February 18 deadline for submission of direct exhibits; and that while an English translation of the Richter witness statement was finally supplied to complainant on February 25, as of March 4, 1988, complainant still had no attachment. On March 4, complainant objected to a motion of respondents filed March 2 to add RTX-018 and to allow Richter to "offer brief live testimony on direct regarding the relevancy of RTX-018."

On March 7, at the prehearing conference, complainant's counsel represented that the attachment to Richter's witness statement (RTX-005) with a translation was received by him on March 5 but marked "In Camera". He then stated that complainant would withdraw its objection to RTX-005 (but not to the attachment or to RTX-018) provided that "no attempt is made by respondents to expand testimony by Mr. Richter beyond what is expressly stated in his

54

statement [RTX-005]" (PreH Tr. at 34, 42). The staff on March 7, 1988 represented that it still had not received the attachment (PreH Tr. at 38). Counsel for respondents argued that complainant's counsel "has come up with a one-week deadline [viz. February 11, 1988] that I think he manufactured and may have put into a letter. Our understanding is that Mr. Kile [respondents' counsel] said, 'early' which meant as soon as we could" (insofar as when complainant was to receive RTX-005) and that respondents offered to complainant "at least twice, possibly more, to make Mr. Richter available [for deposition] over this weekend. And we heard nothing". (PreH Tr. at 45, 46). Respondents' counsel further argued that RTX-018 is a Freudenberg data sheet, i.e. "a document from their own files. It is, again, it is nothing here somebody hasn't seen before". (PreH Tr. at 47). Respondents thereupon withdrew their offer of the attachment to RTX-005. (PreH Tr. at 49).

On March 7, 1988 the staff objected to the admissibility of RTX-018 because "due dates must mean something. And they [respondents] knew about the scheduling from the middle of October". (PreH Tr. at 54). As to RTX-005, the staff stated that if Richter "names names, [presumably in any live cross-examination] even at a deposition, it might be difficult for complainant to bring a rebuttal witness, i.e. an individual who has been named by Mr. Richter." (PreH Tr. at 55).

At the hearing on March 7, 1988, the administrative law judge overruled any objection to RTX-005 and admitted RTX-005 into evidence. With respect to RTX-018, the administrative law judge, while initially deferring any ruling on its admissibility, stated that complainant could take the deposition of Richter but only with respect to RTX-018 and gave complainant the opportunity to amend its rebuttal statements. (Tr. at 56, 57, 61). Following a short break, complainant's counsel represented that an agreement had been reached among the parties to the effect that live cross-examination of Richter could proceed based on RTX-005 and that in the evening of March 7, respondents would furnish complainant a supplemental statement "devoted to RTX-018" which on the next morning, as the examination of Richter continues, would be included with RTX-005. Complainant declined any deposition of Richter on RTX-018 and deferred any decision about amending its rebuttal witness statements or introducing another rebuttal statement relating to RTX-018. (Tr. at 60, 61, 64, 65).

On March 8, 1988, complainant and the staff objected to respondents' "supplemental statement" relating to RTX-018 because the supplemental statement "in addition to addressing RTX-018 addresses the March exhibition in 1975 in Frankfurt, and changes the testimony there [RTX-005] from what Richter said on February 18th. It talks about RTX-6 and other things" (Tr. at 144-145, 153, 154). Thereafter the administrative law judge admitted into evidence RTX-018 and a portion of the supplemental statement identified as RTX-005a, that was found to be devoted to RTX-018. The original supplemental statement, identified as RTX-005b, was not admitted. (Tr. at 347 to 350, 356 to 558).

Order No. 16, which issued on March 7, 1988, sustained complainant's objections to respondents' witness statement RTX-003 of Paul Eilbrecht, and to RTX-014 which was a translation of a decision of the German Patent Office, on the ground that a German Patent Office opinion in German opposition proceedings and testimony about the German proceedings were not of probative significance in this investigation.

Prehearing and posthearing submissions have been submitted by complainant, respondents and the staff.

The matter is now ready for an initial determination.

This initial determination is based on the entire record including the evidentiary record compiled at the hearing and the exhibits admitted into evidence. The administrative law judge has also taken into account his observation of the witnesses that appeared at the hearing. Proposed findings submitted by the parties, but not herein adopted, either in the form submitted or in substance, are rejected either as not supported by the evidence or as involving immaterial matters. The findings of fact include references intended to serve as guides to the testimony and exhibits supporting the findings of fact. The references do not necessarily represent complete summaries of the evidence supporting each finding.

JURISDICTION

The Commission has in rem and subject matter jurisdiction (FF 1). It also has in personam jurisdiction over all the respondents (FF 2, 3, 4).

OPINION ON VIOLATION

At issue in this initial determination is whether respondents have established that claims 1 to 4 and 6 to 9 of the '375 patent are invalid and/or unenforceable, whether complainant has established that claims 1 to 4 and 6 to 9 are infringed by respondents, and whether it would be inequitable to enforce the complainant's '375 patent against respondents.

I. Validity and Enforceability of the '375 Patent

Respondents argue (1) that the claims of the '375 patent are anticipated by prior art under 35 U.S.C. §102(b);[2] (2) that the claims of the '375 patent are invalid in that the named inventors did not invent the subject matter claimed in the '375 patent as required by 35 U.S.C. §102(f);[3] (3) that the claims of the '375 patent were obvious to one of ordinary skill in the art at the time the invention was made and, therefore, the '375 patent is invalid under 35 U.S.C. §103; (4) that the claims of the '375 patent are so vague and indefinite that the '375 patent is invalid under the second paragraph of 35 U.S.C. §112; and (5) that the '375 patent is unenforceable because during examination and re-examination proceedings before the Patent Office, Freudenberg (a) knowingly failed to disclose relevant prior art and (b) knowingly failed to name all the inventors of the claimed invention. (R Post at 1, 2).

---

[2] Respondents' invalidity contention under section 102(b) additionally arises under the provision of section 119 of title 35. Pursuant to section 119, a U.S. patent application filed within one year of the filing date of a corresponding patent application filed in a participating foreign country, is accorded the same effective filing date as the foreign counterpart application and thereby is constructively reduced to practice on the filing date of the foreign counterpart. However, section 119 also contains a special provision paralleling section 102(b) which is applicable to foreign priority applications and prevents the issuance of any patent for an invention which had been patented or described in any country more than one year before the actual filing date of the counterpart application in the United States, or in public use or on sale in the United States one year prior to such U.S. filing date. Consequently, under section 119 since the U.S. application was filed on September 3, 1976 (FF 11), such disclosure of the claimed invention would be invalidating if that disclosure was before September 3, 1975. The Manual of Patent Examining Procedure discusses the effect of section 119 as dating the statutory bar under section 102(b) from the date of the filing of the U.S. application, rather than from the foreign counterpart application's filing date. MPEP section 201.13 (5th Ed. 1983) (Effect of Right of Priority).

[3] In their posthearing submissions respondents assert their claim of improper inventorship under 35 U.S.C. § 102(f). However, this contention is more properly asserted under 35 U.S.C. § 116 which generally requires all the joint inventors to apply jointly and make oath for an invention jointly made by them. Section 102(f) states that a person shall be entitled to a patent unless "he did not himself invent the subject matter sought to be patented". This subsection has been interpreted, consistent with the other provisions of section 102, as establishing a defense where the entire claimed invention has been derived from others. See, Chisum, Patents section 5.03[3]. Respondents do not claim that the named inventors in the '375 patent derived the whole invention from the alleged nonjoined inventors. Consequently, this defense will be considered under the heading of 35 U.S.C. § 116.

Under 35 U.S.C. §282 a United States patent is presumed to be valid. An alleged infringer, asserting that a patent is unenforceable because of inequitable conduct, and invalid has the burden of establishing unenforceability and invalidity by clear and convincing evidence. Jones v. Hardy, 727 F.2d 1524, 1528, 220 U.S.P.Q. 1021, 1024 (Fed. Cir. 1984); Loctite Corp. v. Ultraseal Ltd., 781 F.2d 861, 872, 228 U.S.P.Q. 90 (Fed. Cir. 1985); American Hoist & Derrick Co. v. Sowa and Sons, Inc., 725 F.2d 1350, 1358, 220 U.S.P.Q. 763, 769 (Fed. Cir. 1984), cert denied, 469 U.S. 821 (1984); J.P. Stevens & Co., Inc. v. Lex Tex, Ltd, Inc., 747 F.2d 1553, 1559, 223 U.S.P.Q. 1089, 1092 (Fed. Cir. 1984); W.L. Gore & Associates Inc. v. Garlock Inc. 721 F.2d 1540, 1556, 1557, 220 U.S.P.Q. 303, 315, 316 (Fed. Cir. 1983) cert denied 105 S. Ct. 709 (1984). In addition, claims are to be construed in order to uphold their validity. ACS Hospital Systems, Inc. v. Montifiore Hospital, 732 F.2d 1572, 1577, 221 U.S.P.Q. 929, 932 (Fed. Cir. 1984).

In interpreting a claim, the claim language, the specification and the file wrapper should be considered. See, Graham v. John Deere Co. 383, U.S. 1, 33, 148 U.S.P.Q. 459, 472-473 (1966); Fromson v. Advance Offset Plate, Inc., 720 F.2d 1565, 1571, 219 U.S.P.Q., 1137, 1140, 1141 (Fed. Cir. 1983).

1. Claims In Issue

Independent claim 1 and dependent claims 2, 3, 4, 6, 7, 8 and 9 in issue read as follows:

> 1. A gas filter element comprising a holding frame and at least one self-supporting wedge-shaped filter pocket each having its wide end open and secured to said frame, each filter pocket comprising a pair of substantially symmetrical pocket halves formed of fusible fibers and welded to one another along the wedge edge and centrally along the opposite wedge end faces and at least one laminar spacing element disposed within the pocket and extending from adjacent the open end toward the wedge edge, the spacing element being welded to the opposite inclined wedge faces, the filter pocket being rendered self-supporting by the welding of the pocket halves to one another and the welding of the spacing element to the pocket.
>
> 2. A filter element according to claim 1, including a plurality of spacing elements within each pocket, and spaced from the open mouth and the wedge edge.
>
> 3. A filter element according to claim 1, wherein the filter pocket comprises fusible fibers, the pocket halves being welded to one another by fusion and the spacing element being welded to the pocket by fusion.
>
> 4. A filter element according to claim 1, wherein the remaining wedge edges are also stiffened by fusion.
>
> 6. A filter element according to claim 1, wherein the spacing elements are pyramidal in shape and welded to the opposite inclined wedge faces along opposite longitudinal edges of the pyramid.
>
> 7. A filter element according to claim 1, including a plurality of additional stiffening lines in each inclined wedge face extending from adjacent the open end toward the wedge edge.
>
> 8. A filter element according to claim 1, including a plurality of filter pockets held in fixed position relative to one another by the single holding frame comprising a molded plastic mass in which the open end perimeters of the pockets are embedded.
>
> 9. A filter element according to claim 2, including a plurality of spacing elements within each pocket and spaced from the open mouth and the wedga edge, each filter element comprising fusible fibers, the pocket halves being welded to one another by fusion and the spacing elements being

60

> welded to the pockets by fusion, the remaining wedge edges also being stiffened by fusion, and each filter pocket further including a plurality of additional stiffening lines in each inclined wedge face extending from adjacent the open end toward the wedge edge, said additional stiffening lines coinciding with the fusion lines of the spacing elements to the pockets. [(FF 12)]

Thus independent claim 1 requires that the gas filter element comprise at least one self-supporting wedge-shaped filter pocket secured to a holding frame, with each filter pocket comprising a pair of substantially symmetrical pocket halves formed of fusible fibers. It further requires that the symmetrical pocket halves be welded to one another along the wedge edge and centrally along the opposite wedge end faces. In addition, claim 1 requires that there be at least one laminar spacing element disposed within the pocket and extending from adjacent the open end toward the wedge edge with the spacing element being welded to the opposite inclined wedge face. Claims 2 to 4 and 6 to 9 contain the limitations of claim 1 upon which they depend. (FF 12). All the claims in issue state that the filter pocket is rendered "self-supporting" by the welding of the pocket halves to one another and the welding of the spacing element to the pocket. (FF 12).

2. The '375 Patent Specification

The specification discloses that the invention can be described with reference to FIGS. 1 and 2. (FF 17, 18, 19, 20, 21). FIG. 1, which is a perspective view of a filter pocket in accordance with the claimed invention, and FIG. 2, which is a perspective view of a filter element in accordance with the claimed invention and made up of two filter pockets as shown in FIG. 1 and a holding frame for all four pockets, are represented as follows:

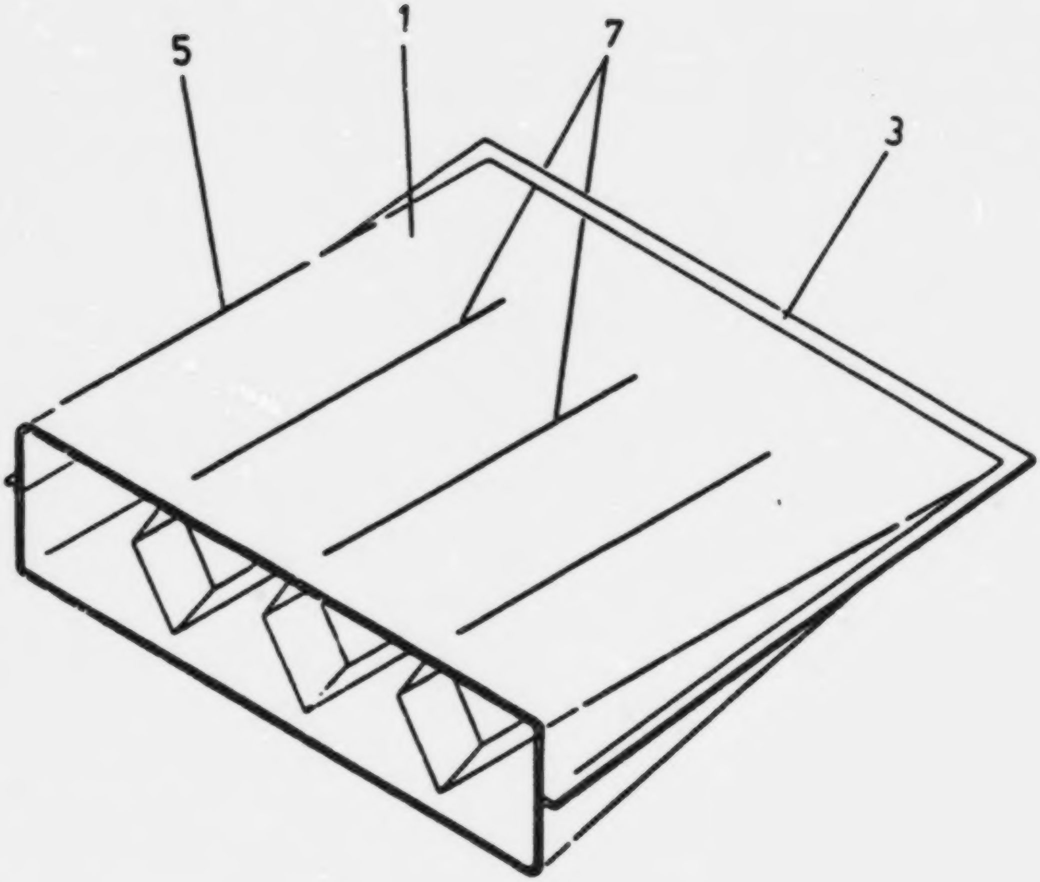


FIG I

BEST COPY AVAILABLE

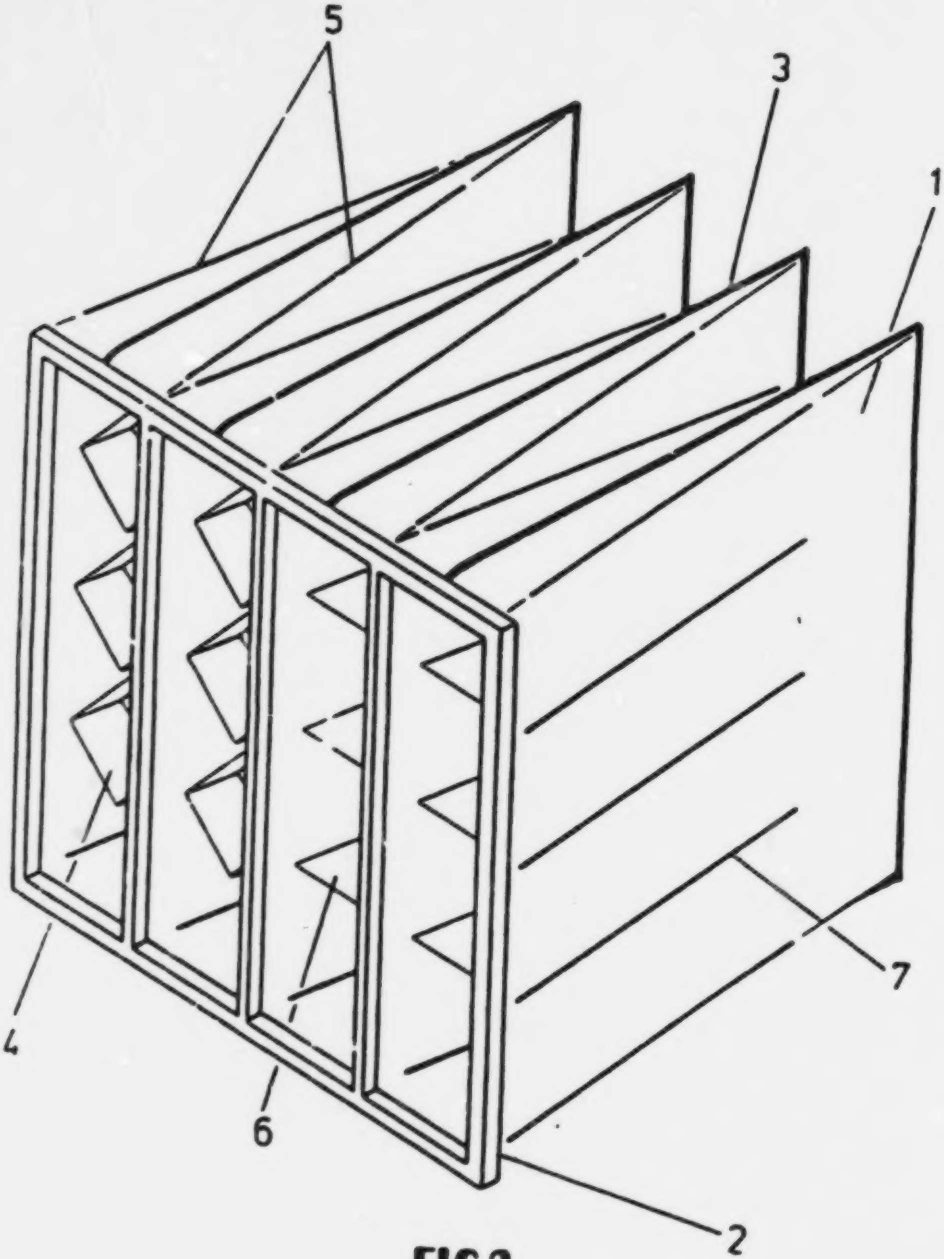


FIG.2

Referring to FIGS. 1 and 2, the claimed gas filter element consists of a holding frame 2 and a plurality of wedge-shaped filter pockets permanently attached to the holding frame characterized in that the pockets have "self-supporting properties in the air stream" due to a trimmed, welded or fused seam joining together the parts of each pocket plus spacing members made of flat material and attached by fusion in line with the direction of air flow. (FF 17). A pair of substantially symmetrical pocket halves are secured to one another as by fusion along the line 3. Each pocket half is formed of

BEST COPY AVAILABLE

gas permeable filter material. For the achievement of further stiffening, and also to optimize conditions for the flow of air or gas into the interior of the pockets, a number of spacing members of lozenge-shaped cross section 4 (further defined in the '375 patent as "pyramidal or truncated pyramidal shapes" (FF 17)) made of nonwoven fabric, sheet material or woven fabric, varying in number according to the quality of the filter medium and its resistance to air flow, are cemented or welded in place at 7. Additional stiffening ribs 5 are provided by local welding of the filter medium. The use of bag-like inserts of lozenge-shape cross section as spacing members is especially advantageous for the stabilization of the filter pockets against fluttering in the air stream although single flat spacing inserts 6 can also be used as shown in FIG. 2. (FF 18). In FIG. 2, a plurality of filter pockets are held together into a unit by the molded holding frame 2 which desirably is made of plastic, foamed in place so as to embed the perimeters of the mouths of the pockets comprising the unit. (FF 21). According to the '375 specification, the filter pockets have no tendency to flutter. (FF 22).

The '375 specification discloses that the materials per se of the claimed filter are known, and desirably comprise non-woven fiber battings "held together by bonding but not sufficiently stiff [by themselves] to be self-supporting". The fibers may comprise any such normally employed fibers and desirably, at least in part, are fusible and if no fusible fibers are present then the requisite adhesion and "stiffening" can be effected by conventional adhesives. (FF 23).

3. The '375 File Wrapper

On January 11, 1977 the Patent Office Examiner rejected all of the original claims of the '375 application filed on September 3, 1976 under 35

U.S.C. §103 as unpatentable over Nutting U.S. Pat. No. 3,386,231 (the '231 patent), French Patent No. 2,201,111 (the '111 patent) and Janson U.S. Pat. No. 3,422,602 (the '602 patent); the Examiner taking the position that it was obvious to apply the spacer of the '111 patent to the '231 patent and that it was additionally obvious to mold the frame of the '602 patent to the '231 patent. A Bauder et al U.S. Pat. No. 3,190,059 (the '059 patent) was cited by the Examiner to show the state of the art. (FF 26).

Responding to the rejection it was argued that while the Nutting patent provides a plurality of longitudinally extending side-by-side filter pockets, each of the pockets are supported at crests around the perimeter of the pockets and hence it would be redundant to provide the spacers of the French '111 patent for support. (FF 29). Additionally, it was argued that the '111 patent does not teach the welding of the spacing elements into the filter pockets and that neither the Nutting nor the French patents could be modified to do so because of the redundancy of providing spacing elements within the Nutting pocket filter. The cited Janson reference was said not to teach or suggest the welding of the spacing elements into the filter pockets to render same self-supporting and in fact, to teach the stitching together of the filter structures rather than the welding or fusing recited in the claims. (FF 29).

It was argued that the Bauder '059 patent teaches a filter structure which is stitched together as opposed to being welded or fused, and that the inherent disadvantage of a machine sewn seam as opposed to the welding or fusing is that a machine sewn seam does not possess any form of stability by itself. The argument was made that under working conditions some part of the originally wedge shaped pockets, as shown in the Bauder '059 patent, inflates as a result of a displacement of the machine sewn threads, whereas the width in other sectors become smaller and points where the sewn threads pass the filter mat cannot be well sealed; that as the Bauder '059 kind of filter is mostly used for fine filtering operations, it results in undesired points where dust can pass and which can increase in a relatively short time especially as a result of the stress on the thread at particular points of the filter medium due to the fluttering movements of the filter medium; and that the pockets of the Bauder '059 filter pocket are held together in the sector of the upper and lower seam, only by means of a machine sewn seam and that such a seam is not able to provide self-supporting properties where there is a vertical mounting of the pocket filter. In contrast it was argued that the claimed filter pocket in issue is provided with a welded seam, not only in the sector of the upper or lower end ridge but also additionally in the sector of the ridge on the right side, and that this welded seam forms an integrated static stiffening element of the filter pocket rendering it self-supporting. (FF 29).

On May 18, 1977 the following language was added to amended independent claim 1 "formed of fusible fibers and". With this addition amended claim 1 read as independent claim 1 in issue. (FF 30). The '375 patent issued on Nov. 1, 1977. (FF 11).

4. Reexamination of the '375 Patent

Independent claim 1 and dependent claim 2 in issue were subjected to a second examination by the Patent Office when the Examiner on July 23, 1986 granted a request by the owners of the '375 patent for reexamination. The Examiner took the position that the Bauder '059 patent, which had been cited by the Examiner in the initial prosecution to show the state of the art

(FF 26), when taken with the Nutting '231 patent and a French patent 1,296,701 (the '701 patent) raised a question as to the patentability of independent claim 1 and dependent claim 2. (FF 39).

The French '701 patent had been brought to the attention of the Examiner in the request for reexamination by the owners of the '375 patent. (FF 37). It was said by the owners in the request that the '701 patent concerned high capacity air and gas filters which are composed of a number of filter layers so arranged that two successive layers form a triangular-shaped space; and that figure 6 of the '701 patent shows inserts which can be placed into a triangular-shaped area, which inserts "look somewhat like" the spacing elements recited in independent claim 1 and dependent claim 2 in issue. (FF 37).

In a response filed September 24, 1986 the patentees argued that the two principal differences between the '375 claims and the disclosure of the Bauder '059 patent are (1) the welding of the wedge edges together and (2) the welding of spacing elements within the pocket halves; and that the use of welding, rather than other methods of attachment such as stitching or binding, is important in providing the gas filters, according to the '375 patent, with their improved qualities. The argument was made that according to independent claim 1 in issue, each filter pocket comprises "a pair of symmetrical pocket halves . . . welded to one another along the wedge edge and centrally along the opposite wedge end faces"; that thus welding is required on three sides: bottom, top and rear as shown in FIG. 2 of the '375 patent; that in the Bauder '059 patent the pocket may be formed of a single rectangular sheet, the rear end being folded over and the top and bottom edges being "stitched together or otherwise secured"; that although Bauder uses the term "otherwise secured", there is no definition of that term or any illustration of any means of securing the two sheets together other than by stitching; and that therefore, the Bauder '059 patent as a whole must be interpreted as disclosing only stitching as a means for securing the pocket-forming sheets and that indeed, there is further reference in the Bauder '059 patent to "upper and lower stitch edges". (FF 40).

The patentees argued that while the process of stitching and the process of welding can both be regarded as methods of fastening two objects together, when dealing with non-rigid materials such as the nonwoven mats of glass or textile fibers which are commonly used as air filter media, a stitching process and a welding process lead to quite different results which affect the operation of the filter element; that in the '375 patent the patentees have provided an improved air filter element which possesses rigidity at certain points and which does not have a tendency to flutter; that those advantageous properties are the result of the fact that the symmetrical pocket halves are welded together rather than being joined by other means such as stitching; and that the welding of the filter material provides a stiffened zone which extends along to the top, rear and bottom portions of each filter pocket and serves two important functions: first it materially decreases the tendency of each filter pocket to flutter and thereby increases the efficiency of the filter unit and secondly the increased rigidity of each filter pocket means that when air is not passing through the filter unit, each filter pocket will maintain its "general shape and not fall down, bag-like upon each other". It was argued that in contrast, a stitched-together series of filter pockets, such as that shown in the Bauder '059 patent, would not have any rigidified portions and would therefore not exhibit the advantages of the '375 gas filter element. (FF 40).

The patentees also made the argument that claim 1 of the '375 patent requires "at least one laminar spacing element disposed within the pocket and extending from adjacent the open end toward the wedge edge, the spacing element being welded to the opposite inclined wedge faces"; that this second differentiating feature is also instrumental in providing the '375 filter element with its advantageous properties because the welds provide additional stiffened areas which hold the pocket open and prevent fluttering and falling; that in contrast to welded inserts, the Bauder '059 patent discloses only a "series of filamentary stays" which are stitched into the walls of the filter pocket; that the stitching of filamentary stays through the pockets can not serve the purpose of stiffening; that the substitute materials, such as webbing or thin flexible sheet material taught in the Bauder '059 patent would not provide rigidity; and that, while the Bauder '059 patent uses the term "otherwise secured" there is no definition of the term and no specific examples, other than sewing, of any means to obtain such "securing". (FF 40). It was argued that one of the disadvantages resulting from stitching or sewing is the resultant small holes in the filter medium and that this is recognized in the Bauder '059 patent which discloses that a layer of adhesive sealant should be applied to seal such holes. (FF 40).

In the response filed September 24, 1986 the patentees further argued that the Nutting patent does not disclose wedge-shaped filter pockets; that there are no welded edges and no internal spacing elements; that the pocket filter consists of forms which are stiffened throughout their entire surface; and that the forms are produced individually and subsequently connected.

With reference to the cited French '701 patent the patentees argued that unlike the non-rigid filter media of the '375 patent and the Bauder '059

69

patent, the French '701 filter is composed of non-flexible fibers such as mineral or glass fibers; that the spacers 9, 10 and 11 shown in FIGS. 5, 6 and 7 of the French '701 patent would not meet the requirement of the '375 patent of a "laminar spacing element disposed within the pocket"; that the French '701 filter element does not contain flexible filter mats and hence there can be no problem of lack of rigidity or fluttering; and that the French '701 patent does not disclose any possibility of welding the mats together. (FF 40).

On October 26, 1986, the Examiner concluded that the Bauder '059 patent, when taken with the Nutting '231 patent and the French '701 patent, did not raise a question as to the patentability of independent claim 1 and dependent claim 2 of the '375 patent because they define a laminar element in each of the filter pockets which is welded between faces of pocket with the pockets formed of fusible fibers and the laminar element extending from adjacent the open end towards the wedge edge of the pockets. Claims 3-9 were said to be "confirmed" as they depend from "confirmed" patentable claims 1 and 2. The Examiner took the position that the Bauder '059 patent stitches filamentary stays between the faces of the pocket and does not teach welding a laminar element extending between faces from open end towards wedge edge of the pockets; that the Nutting '231 patent does not teach a laminar element between faces of each pocket; and that the French '701 patent does not teach filter pockets and the welding of the laminar element. (FF 41).

5. 35 U.S.C. §102(b)

Respondents argue that more than fifteen months before Freudenberg filed its U.S. patent application on September 3, 1976 (FF 11) (i.e. before

June 3, 1975), the evidence shows convincingly that Freudenberg published a sales brochure (RTX-006) in Europe disclosing the claimed invention. (R Post at 3).

Complainant argues that the evidence presented by respondents does not even raise an inference of a prior publication. (C Post at 7). The staff argues that respondents have failed to overcome the presumption of validity under §282 in their arguments regarding invalidity under §102 because the evidence shows that "it is unlikely that the product brochure [RTX-006] was distributed to the public" and that neither "the product brochure ... nor any other prior art reference discloses each and every element of the claims of the '375 patent." (S Post at 8).

(a) RTX-006 As a Printed Publications

Respondents, in an attempt to establish that RTX-006 was published "more than fifteen months" before Freudenberg filed its U.S. application argue that at an international trade fair in Frankfurt Germany between March 19 and March 23, 1975, not only was a physical sample of the claimed pocket filter in issue displayed by Freudenberg to preferred customers, including about eight independent foreign distributors, but also that there was "passed out" by Freudenberg a product information sheet entitled "Viledon Compact Filter Bag Unit" (RTX-018) which set forth "basic technical information" about the "Viledon Compact Filter Bag Unit". (R Post at 3).[4]

---

[4] Respondents do not contend, and the record does not support a finding, that Freudenberg at the Frankfurt March 1975 fair displayed, or "passed out", RTX-006.

The record does establish that an ISH Frankfurt fair took place on March 19 to 23, 1975 (FF 52, 57, 58, 63, 74, 77, 82) which is before the German priority application on the '375 patent was filed;[5] that the Filter Division of Firma Carl Freudenberg, a corporate affiliate of complainant (FF 5), did have a booth at the ISH March 1975 Frankfurt fair (FF 77, 83, 85); and that approximately eight representatives of companies (also referred to as "preferred customers") around Europe that had exclusive sales' distributors rights for the corporate affiliate's products, and which companies are called the "Viledon" family,[6] were invited to the Frankfurt ISH March 1975 fair by Freudenberg and were shown a hand manufactured or hand produced "Viledon" finished compact filter in a private booth. (FF 85, 86, 87). Moreover there is testimony by respondents' Richter, who then worked for Freudenberg (FF 53) and in 1982 was fired (FF 249), that from March 19, 1975, he began efforts to promote and market the "Viledon" compact filters; that he attended a meeting on March 14, 1975 prior to which the "printing of RTX-018" was agreed to; that "[w]e chose to first print a sample product specification sheet RTX-018 because we were trying to have something prepared for a meeting to be held on March 18 and subsequent for the International Fachmesse ISH held in Frankfurt which opened on March 19, 1975 where preferred customers were presented" with a copy of RTX-018; that after the Frankfurt March 1975 fair Richter continued to use the RTX-018 sheet in his sales efforts directed to the "Viledon" compact filters; and that on April 25, 1975 Richter and two of his assistants visited the Ford Motor assembly plant at Cologne and used RTX-018 to advertise filters. (FF 57).

---

[5] The '375 patent relies on a German priority application filed on September 17, 1975. (FF 11).

[6] The word "family" is used by Freudenberg to describe exclusive distributorships outside Germany which are independent companies with whom Firma Carl Freudenberg has had a long-standing, strong contact.(FF 85, 86).

Complainant's Gsell, who attended the March 1975 Frankfurt ISH fair and was in Freudenberg's trade booth during the whole time the fair lasted (FF 83), testified that the showing of the "Viledon" compact filter by the Firma Carl Freudenberg at the Frankfurt fair was not displayed in any public fashion but was shown to the approximately eight representatives behind closed doors in separate little rooms provided in the booth of Firma Carl Freudenberg. (FF 85). As respondents' Richter[7], who had helped staff the Freudenberg booth at the March 1975 Frankfurt fair (FF 58) testified, the "Viledon" compact filter was not officially displayed in the fair booth of Firma Carl Freudenberg but rather was shown behind closed doors and no literature promoting such pocket filters was distributed or otherwise generally made available to the Frankfurt's fair attendees. (FF 59). Richter's testimony is consistent with complainant Gsell's further testimony that the official fair catalogue, which listed the products publicly displayed by Firma Carl Freudenberg at the Frankfurt March 1975 fair, did not include the "Viledon" compact filter and that in contrast, the catalogue for the succeeding ISH Frankfurt Fair, held on March 23 to 27, 1977 did list the "Viledon" compact filter (FF 77, 78, 79); that Freudenberg's sales activities with the nonwoven pocket filters in the foreign market started in 1976 and domestic (German) activities started in November 1975 as indicated by a first price list which was a necessary precondition to bringing those pocket filters to the German market; and that no nonwoven pocket filters were commercialized by Carl Freudenberg before November 1975. (FF 80).

---

[7] Richter has had an exclusive consulting agreement with respondent Filtrair, b.v. since January 1983 (FF 54, 55).

Complainant's Gsell testified with respect to RTX-018 that while he was only present during "one of these discussions in this locked discussion room" at the Frankfurt March 1975 fair, the RTX-018 was not then handed over to any representative. (FF 85). Moreover the administrative law judge finds that while RTX-018 may set forth technical information about the "Viledon" compact filter, RTX-018 neither pictures nor describes the structure of any filter nor does it disclose the claimed '375 patented gas filter element invention in issue. This is shown by observation of RTX-018 which has been duplicated in full in the findings. See FF 56. Thus there is nothing in the RTX-018 technical performance specification sheet that discloses a gas filter element containing a laminar spacing element in each of its filter pockets which is welded between faces of the pocket with the pockets formed of fusible fibers and the laminar spacing element extending from adjacent the open end towards the wedge edge of the pocket as recited in the claims in issue. (FF 41, See FF 56). Hence any distribution of RTX-018 is not a publication of the invention under 35 U.S.C. §102(b), and does not show distribution of the different RTX-006.

Referring to Freudenberg's activities at the Frankfurt 1975 fair, respondents argue that "the [claimed] filter and information sheet [RTX-018] were in the public domain more than one year before Freudenberg filed its application for patent in the United States" and that although Freudenberg filed an application for patent first in Germany and claimed the benefit of its priority date, priority does not negate an applicant's duty to file an application "within the United States within one year of the first publication of the claimed invention" (R Post at 4). Respondents have not defined the term "public domain" and that term is not found in 35 U.S.C. §102(b). Moreover in referring to the term "first publication" respondents did not specify what document they were referring to. Any physical display of the claimed filter at the March 1975 Frankfurt fair, even if a public display, would not thereby invalidate the '375 patent under 35 U.S.C. §102(b).[8/] Section §102(b) of title 35 reads:

> A person shall be entitled to a patent unless--
>
> * * *
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States, or (Emphasis added)

A person's entitlement to a United States patent is defeated when the invention was patented or described in a printed publication in a foreign country but not when the invention is in foreign public use, which can involve a public display, or on sale in a foreign country. See, O'Reilly et al v. Morse, 56 U.S. (15 How.) 62, 110 (1853) (the telegraph case) (A previous discovery in a foreign country shall not render a U.S. patent void, unless such discovery or some substantial part of it had been before patented or described in a printed publication); Badowski v. United States, 118 U.S.P.Q. 358, 361 (Ct. Claims 1958) (knowledge or use of a device in a foreign country without such knowledge or use in the United States is not a statutory bar to

---

[8/] Respondents appear to be in agreement. Thus although they have findings relating to Freudenberg's activities at the Frankfurt March 1975 fair (see RPF 66-72), respondents rely only on RTX-006 to support their § 102(b) allegation (see RPCL 12).

75

a U.S. patent on the device). In re Hilmer 359 F.2d 859, 878, 149 U.S.P.Q. 480, 496; (prohibition of 35 U.S.C. §104, the limitations in sections 102(a) and 102(g) to "in this country," and the specifying in 102(e) of an application filed "in the United States," clearly demonstrate a policy in the patent statutes to the effect that knowledge and acts in a foreign country are not to defeat the rights of applicants for U.S. patents, except as applicants may become involved in priority disputes).[9/]

Respondents argue that complainant responded to interrogatories by denying the existence of physical examples of the "Viledon" compact filters prior to November, 1975; and that this is in direct contradiction to

---

[9/] Pertinent sections of 35 U.S.C 102(a), (e), (g) and 104 read:
§102. Conditions for patentability; novelty and loss of right to patent

A person shall be entitled to a patent unless--

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent, or

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, ...

(g) before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it. ...

§104. Invention made abroad

In proceedings in the Patent and Trademark Office and in the courts, an applicant for a patent, or a patentee, may not establish a date of invention by reference to knowledge or use thereof, or other activity with respect thereto, in a foreign country, except as provided in sections 119 and 365 of this title. ...

complainant's Gsell's testimony at the hearing with regard to Freudenberg's activities at the Frankfurt March 1975 fair; and that Freudenberg's response to interrogatories and Gsell's witness statement represent an attempt by complainant to conceal facts to support its position. (R Post at 6).[10/]

[10/] Respondents' Request for Admission Nos. 6 and 9 which complainant denied read:

> 6. Admit that you displayed a physical example of the Viledon "Compact Grob" filter at the International Fachmesse Sanitar Heizung Klima trade show held in Frankfort, Germany for attendees to inspect in March, 1985 [sic].
>
> 9. Admit that you displayed a physical example of the Viledon "Compact Fein" filter at the International Fachmesse Sanitar Heizung Klima trade show held in Frankfurt, West Germany in March 1975 for attendees to inspect.

(FF 105). Respondents' Interrogatory Nos. 6, 9 and 23 and complainant's responses read:

> 6. If the response to request for admissions number 6 is anything other than an unequivocal admission, specify what portion of the request is not admitted, the factual basis for failing to admit, the identity of the person or persons most knowledgeable about the subject matter of the request; if the request can be altered slightly so that it may be admitted, state what alterations can be made so that the request is admitted.
>
> RESPONSE: This request for admission is denied outright. As is set forth in response to Interrogatory No. 23, *infra*, no prototypes were in existence at the time of this trade show. Those most knowledgeable include Messrs. Gsell, Burk and Huber.
>
> 9. If the response to request for admissions number 9 is anything other than an unequivocal admission, specify what portion of the request is not admitted, the factual basis for failing to admit, the identity of the person or persons most knowledgeable about the subject matter of the request; if the request can be altered slightly so that it may be admitted, state what alterations can be made so that the request is admitted.
>
> RESPONSE: This request for admission is denied outright. As is set forth in response to Interrogatory No. 23, *infra*, no prototypes were in existence at the time in question. Those most knowledgeable include Messrs. Gsell, Burk and Huber.

(Footnote continued to page 27)

The record shows that at the Frankfurt fair only certain preferred customers in a closed room were shown a hand produced or hand manufactured "Viledon" compact filter by Freudenberg (FF 85) and that there was no public display. Moreover the physical display of a hand produced or hand manufactured "Viledon" finished compact filter or even a "prototype" is not a "printed publication" as that term is used in 35 U.S.C. 102(b). In addition, while respondents argue that complainant has attempted to conceal facts, it was complainant's rebuttal witness Gsell who readily testified at the hearing that hand produced or hand manufactured samples of the compact filter were shown in a closed room by Freudenberg to certain attendees at the Frankfurt March 1975 fair. (FF 85).

Respondents argue that:

> "a few weeks after the [March 1975] Frankfurt Fair, and no later than May 1975 [which is more than one year before the U.S. patent application was filed on the '375 patent], Freudenberg published a more complete sales brochure ... [RTX-006] setting forth the same information contained in the product information sheet [RTX-018], as well as

---

(Footnote continued from page 26)

> 23. When were the filters depicted in Exhibit 1, or similar products, first fabricated; when were such products first sold; to whom were the products first sold; what Freudenberg employees were involved in the initial sales; when were such products first offered for sale to persons in the United States; when were such products first sold in the United States.
>
> RESPONSE: The first prototypes were fabricated sometime in 1975, not earlier than September, and were first sold in November/December 1975. Complainant does not know the identity of the first customer. Mr. Huber is the most knowledgeable employee regarding this matter.
>
> The first sales in the United States were in mid-1977.

(FF 106).

> additional information, and included two pictures of the Freudenberg filter. These two photographs, together with the data on the RTX-006 brochure disclosed the entire design and construction of the claimed filter. [RPost at 4].

Respondents rely on the testimony of respondents' Pieter K. Borkent and Richter (RPF 75 to 80) to support this argument. Richter, to date, has received from respondents more than [ ] for his consulting services. (FF 55). Richter also derives additional income from Filtrair through activities involving the sale of Filtrair products. (FF 55, 248). Borkent is marketing and financial director of respondent Filtrair b.v. and president of the only other respondent, viz. APB Corporation (FF 45) which was founded in February 1984 to organize the sale of filtration products of Filtrair b.v. and distribute said products in the United States. (FF 51). Borkent and his brother A. Borkent own equal shares, and are "dual" heads, of respondent Filtrair b.v. (FF 46, 49).

RTX-006 has been duplicated in full in the findings. See FF 60. The lower right-hand corner of the first page of RTX-006 has the legend "A 475.2". (FF 60). Complainant has not taken issue with the fact that RTX-006 originated from Freudenberg.

RTX-006 was sponsored by respondents' Borkent. Borkent testified that he, as an attendee of a fair,[11] received RTX-006 from Freudenberg and that he retained the original of RTX-006 in his files since its receipt until the original was turned over to his attorneys for use in this investigation. (FF 61). Borkent however was indecisive and contradictory as to which fair he received RTX-006.

---

[11] Also referred to as an "exhibition" by witnesses.

The record shows that complainant was first told by Borkent on September 21, 1987 in response to complainant's Interrogatory No. 21 that Borkent became aware of the design or structure of the claimed nonwoven gas filter at an April 1975 ISH exhibition in Frankfurt. (FF 107, 108). However in a declaration of Borkent received by complainant in November 1987 and in a deposition on November 19, 1987 Borkent stated that he received the original of RTX-006 during one of three exhibitions that were held in early 1975, viz. at the ISH exhibition in Frankfurt in March, or at May exhibitions in Goteborg, Sweden or in Stavanger, Norway. (FF 63, 112). In deposition in November 1987 Borkent testified that when he responded to complainant's Interrogatory No. 21 in September 1987 and listed only the Frankfurt 1975 exhibition, he was making the response by memory (FF 108); that after Borkent's response to the interrogatory Borkent had obtained information from the Frankfurt fair organization, through Filtrair's Dutch patent agent Eilbrecht, that showed that the Frankfurt exhibition was in March 1975 (FF 63, 108); that Borkent involved Eilbrecht by presenting him with RTX-006 and telling him that RTX-006 "must have been handed out to [Borkent] ... at the fairs that were held in early 1975. And they were, the ISH [the Frankfurt fair], the VVS, the Goteborg, and in Stavanger" (FF 63); and also that Eilbrecht confirmed the dates for the 1975 Goteborg and Stavanger fairs. (FF 63). Yet Borkent testified in the November 1987 deposition, after learning from Eilbrecht about the exact dates for the three fairs, that he was not sure whether he received RTX-006 either at the Frankfurt 1975 ISH fair or at the Goteborg or Stavanger May 1975 fairs; that his declaration received by complainant in November 1987 implied that it was at either of the three fairs; that Borkent does not recollect twelve and a half years later at which

80

exhibition he collected RTX-006 (FF 112); and that Borkent did not testify that it could only be at the ISH Frankfurt fair that he received RTX-006 because "[i]t is too long ago that I could remember exactly which fair it was. And there were three fairs at that time." (FF 113). Moreover in Borkent's witness statement (direct examination) which respondents submitted on February 18, 1988 and which attached RTX-006, Borkent again testified that he received RTX-006 at least at one of the following three fairs - the Frankfurt ISH March 19-23, 1975 Fair, the Goteborg May 9-14, 1975 Fair and the Stavanger May 24-25 1975 Fair. (FF 61).

In contrast to Borkent's testimony in the fall of 1987, in live examination at the hearing, Borkent on March 8, 1988 testified:

> Q That was not my question, Mr. Borkent. My question is do you believe that you saw this leaflet [RTX-006] at the Frankfurt fair in March of 1975?
>
> A Looking at the brochure, it was my recollection that I received that at either of three fairs. Later evidence of when the fair exactly was held which is usually held in a period early in the year made me realize that it probably was not the ISH fair, but probably one of the two after the ISH fair, but it was in the same time frame.
>
> * * *
>
> Q Until you found out, Mr. Borkent, when the fair was, you believed that you got the leaflet at that [Frankfurt] fair, right?
>
> A I believed that I received that leaflet [RTX-006] at one of those fairs. And since they were held closely together, I could not distinguish between the fairs which one it was.
>
> Q The fact of the matter is, Mr. Borkent, that the leaflet, RTX-6, was not in existence at the time of the ISH Frankfurt fair in March 1975, is that not correct?
>
> A It was in existence very close to the ISH fair and twelve and a half years ago. I could not recollect what the difference between a few weeks was between three fairs.

JUDGE LUCKERN: You know whether it was in existence in March 19-23?

THE WITNESS: I do not know whether it was in existence in March 1975.

JUDGE LUCKERN: All right. Thank you.

BY MR. FELFE:

Q But Mr. Richter says in his statement that it was not printed until at the earliest April or May 1975, is that not correct.

A I believe that is what he testified.

Q Does that not make it physically impossible that you saw this leaflet in Frankfurt in March 1975?

A No. The only reason that I feel that makes it physically impossible is that code on the bottom of the front page says 475 meaning April 1975, which makes me believe that I could not have seen it in the third month of the year 1975 being 3/75.

* * *

Q Do we agree, Mr. Borkent, that it is physically impossible that you saw this leaflet in Frankfurt at the ISH fair in March of 1975?

A Knowing that the fair was held in March, yes. [(FF 62)]

Thus on March 8, 1988 Borkent admitted that it was physically impossible that he saw RTX-006 at the Frankfurt fair in March 1975 because the code on the bottom of the first page of RTX-006 says 475 which meant April 1975 to Borkent. Yet on February 18, 1988 when he filed his witness statement, and attached RTX-006 which had the 475 code,[12/] and in November 1987 after Borkent knew from Eilbrecht that the Frankfurt fair was in March 1975, he

---

[12/] Ground rule 5 requires that a witness statement is to reflect testimony of the witness and the witness' own knowledge.

testified and made a declaration that he received RTX-006 at either the Frankfurt fair held in March, 1975, the May 1975 Goteborg fair or the May 1975 Stavanger Fair. (FF 112).

With respect to the legend "A 475.2" that appears at the lower right-hand corner on the first page of RTX-006 (FF 60), respondents argue that the legend indicates that RTX-006 "was printed during April 1975" (R Post at 4). The record does not support that allegation. Respondents' Richter testified that RTX-006 "was not printed until somewhat later, as far as I remember in April/May 1975". (Emphasis added) (FF 59). Other than the qualified statement "as far as I remember", which is more than twelve years ago, Richter presented no testimony as to why he concluded that RTX-006 was printed in "April/May 1975". Also Richter's testimony refers only to a printing and not to a dissemination. See, In re Wyer 655 F.2d 221, 210 U.S.P.Q. 790, 794 (CCPA 1981). Borkent did testify that "[u]pon information and belief", the code designation A 475.2 on RTX-006 is a Freudenberg designation for a printing date of April 1975. (FF 61). This is not "April/May 1975" as Richter testified. Moreover more importantly Borkent testified that Richter was "neutral" about the substance of Borkent's testimony when he first heard about it. (FF 64). In addition, Borkent's testimony as to the meaning of "A 475.2" carries little weight because it is only on "information and belief", which inherently is an allegation without personal knowledge. See, Cable Electric Products, Inc. v. Genmark, Inc., 770 F.2d 1015, 226 U.S.P.Q. 881, 888 (Fed. Cir. 1985); Petersen Manuf. Co. v. Central Purchasing Inc., 740 F.2d 1541, 222 U.S.P.Q. 562, 569 (Fed. Cir. 1984). While Borkent testified that "I have 15 years of history of seeing Freudenberg brochures" (FF 64) and

> JUDGE LUCKERN: But it is your testimony that the 475 does refer to April 1975?
>
> THE WITNESS: I have seen at least ten to fifteen brochures from the Freudenberg Company bearing some

> codifications which always have a central number of some kind that indicates a year, the last two digits of a year in a century plus a number that corresponds with a month, anywhere between 1 and 12. [(FF 62)]

none of the "ten to fifteen" brochures nor the codifications in those brochures were identified by Borkent. Moreover the mere fact that codifications may exist on at least ten to fifteen Freudenberg brochures does not, as such, establish that those codifications refer to a date for a "printed publication" as that term is used in 35 U.S.C. §102(b).

In rebuttal testimony complainant's Gsell testified that RTX-006 was a "promotional leaflet"; that "A 475.2" means only that RTX-006 was "laid out", i.e. designed, in April 1975 and does not indicate any printing or availability date; that printing and distribution occurred subsequent to lay-out; that as a result of various difficulties and delays encountered in the initial manufacture of the pocket filters, the product could not be brought to market until the period starting in November 1975; and that earlier distribution of RTX-006 would have been commercially pointless and out of keeping with the practice of Firma Carl Freudenberg. (FF 75).

Respondents argue that Gsell admitted that he was not involved with preparing RTX-006, did not know who had prepared it, and was not generally involved with preparing sales literature during 1975; that there is no basis for Gsell's speculative statement that it would have been "out of keeping" for Freudenberg to have published and distributed the brochure until November 1975; and that Gsell does not know when RTX-006 was published or to whom it was distributed; and his testimony twelve years later at the hearing was nothing more than a self-serving effort to help his present employer. (R Post at 5, 6).

84

Gsell has been employed at Firma Carl Freudenberg since 1960. (FF 74). In 1975 he was responsible for the sales of "Viledon" compact filter products for export worldwide and has a more responsible position with Freudenberg today (FF 82). While Gsell could not know from his own personal knowledge when RTX-006 was sent by someone in Freudenberg's advertising department to a printer to be printed, unrefuted is Gsell's testimony that he has participated "in several brochures concerning pocket filters, filter masks, general air filter material, as far as the design and content is concerned." (FF 90). As such, he has experience with such brochures. In contrast, there is no evidence that respondents' Borkent had any such experience.

Other than the evidence referenced above, respondents, to support their allegation that RTX-006 was published more than fifteen months before Freudenberg filed its U.S. application, rely on Borkent's testimony that as an attendee of a May 1975 Goteborg, Sweden fair or May 1975 Stavanger, Norway fair he received RTX-006. (FF 62).

The record establishes that Borkent in May 1975 was employed on a full-time basis as a financial comptroller, a reasonably responsible position, for the European Division of Hunter-Douglas, an aluminum conglomerate company based in Rotterdam, the Netherlands. (FF 68, 71). He had commenced full employment with Hunter-Douglas, a multimillion dollar company, in 1973 and continued full employment until the end of 1982 or early 1983. At Hunter-Douglas Borkent was concerned with aluminum products and heating boilers and had substantial responsibilities. (FF 68, 71, 109). Borkent's work at Hunter-Douglas did not involve filter products. (FF 70). Hunter-Douglas did not exhibit at the May 1975 Goteborg or Stavanger fairs. (FF 68, 69, 109, 111). Borkent testified that "I would generally take days off" to attend such fairs. (FF 109). Also the record does not show that respondents in 1975 even had an interest in pocket filters. Thus it was not until the spring of '84, nine years later, that respondent Filtrair b.v. purchased a "Viledon" pocket filter, and it was not until the summer of 1984 that Filtrair b.v. did its first trials with a pocket filter. (FF 65, 206, 207, 208).

The record further establishes that respondents' reason for referring to the Goteborg and Stavanger May 1975 fairs is Borkent's testimony that Borkent presented RTX-006 in September 1987 to Filtrair's Dutch patent agent Eilbrecht from Borkent's files and Borkent "simply said this [RTX-006] must have been handed out to me at the fairs that were held in early 1975. And they were, the ISH, the VVS, the Gothenburg, and in Stavanger" (FF 63).[13/] The record has nothing to corroborate Borkent's testimony in 1987 and 1988 that he attended the Goteborg or Stavanger May 1975 fairs. Thus Borkent testified "You must realize that I see tens or I must have seen 50 to 80 fairs since -- from now back to that period [May 1975]" (FF 109); and that "I cannot recall specifically that one [a booth of a Swedish representative or distributor of Freudenberg products at the Goteborg May 1975 fair] because I have too many recollections of too many shows that I could identify 12 years after the fact exactly that one. If you would ask me specifically about a fair in Gotenborg of a month ago, I would be able to be more specific". (FF 109). Borkent further testified that he went through Stavanger in May 1975 but "[s]ince I had never much time because I had another employee, when I went, I went fairly quickly" (FF 110); and that he did not go to Stavanger in May 1975 in

---

[13/] At the hearing, Borkent ruled out the ISH fair. (FF 62).

86

connection with his work at Hunter-Douglas. (FF 111). He agreed that he "took time off from ... [his] full-time job in Rotterdam [with Hunter-Douglas] to go to these places [Goteborg and Stavanger] to ... pass through the fairs." (FF 111). Borkent had no idea of the hotel he stayed at in Goteborg or at Stavanger in May 1975. (FF 68, 109, 110). He did not know how many exhibitors were at the May 1975 Goteborg Fair. (FF 109). He remembered no exact make-up of the booth at the Stavanger Fair that exhibited Freudenberg products. (FF 110). At the Goteborg fair Borkent did not meet anybody that he knew (FF 68, 111) and does not recall any people he met at the Stavanger fair. (FF 69, 111). Although Borkent testified that Freudenberg products were at the Goteborg fair he admitted that Freudenberg did not have a booth at the fair. (FF 72). While Borkent testified that Ove Jodal was one of the "Viledon" distributors in Norway and he remembers "seeing a booth of Ove Jodal" he testified that while in Stavanger in May 1975 he did not see a booth with a Freudenberg compact filter and Borkent further testified that he had not stated whether he saw a compact filter in the Ove Jodal booth at the Stavanger May 1975 fair. (FF 72). This testimony is inconsistent with Borkent's direct testimony that physical models of the "Viledon" filter were displayed at the three fairs. (FF 61). Borkent has no documentary evidence that he was at the Goteborg or Stavanger May 1975 fairs and has nothing to show when RTX-006 was put in his files. (FF 69, 73, 109).

Additionally, respondents' Richter, who was employed by Freudenberg in May 1975, while testifying that the "product filters were also to be exhibited at the VVS exhibition stand of the VILEDON filter representative in Goteborg, Sweden, which took place around mid-1975", testified that he attended "only"

87

the Frankfurt March 1975 fair and "cannot say with certainty whether the pocket filters were exhibited at the VVS fair." (FF 59). Complainant's Gsell testified that the Carl Freudenberg Filter Division attended no fairs in 1975 (other than the Frankfurt March 1975 fair) at which any Freudenberg pocket filter elements or literature relating to such pocket filters would have been on display. (FF 76). In addition RTX-006 is in German (FF 60) and it was intended for distribution to customers within Germany and countries where German is spoken such as Austria. (FF 90b). Moreover Borkent has indicated that Freudenberg had different language versions of brochures (FF 108, 113) and respondents have admitted that RTX-006 was intended for use in German speaking areas and not for use in international sales (RPRPS 2a). Respondents have not established that a German language brochure such as RTX-006 would have been used in Norway or Sweden.

Based on the foregoing, the administrative law judge finds that respondents, who have the burden, have not established by clear and convincing evidence that RTX-006, more than twelve months before Freudenberg filed its U.S. application for patent, was publicly available as a "printed publication" as that phrase is used in 35 U.S.C. §102(b). See, In re Wyer, 655 F.2d at 224, 210 U.S.P.Q. at 794 ("printed publication" in 35 U.S.C. 102(b) means the accessibility to at least the pertinent part of the public, of a perceptible description of the invention). Borkent's testimony is found to be too tentative, contradictary and uncorroborated to satisfy respondents' burden for establishing a "printed publication" date before the critical date.

(b) Disclosure of RTX-006

Respondents argue that RTX-006 invalidates the '375 patent under 35 U.S.C. §102(b) because as explained by respondents' experts Bauder and Rivers, RTX-006 "discloses all of the essential features of the pocket filter claimed in the '375 patent". (R Post at 7).[14]

Respondents' Bauder however testified that he could not tell whether RTX-006 shows a media of fusible fibers (FF 94); that the reference in RTX-006 to "synth fibers" could be to either fiber glass or anything man-made which is not necessarily limited to nonwoven fusible fibers (FF 94); that he agrees that what is shown in RTX-006 could be a pocket that has been folded in the back the way it has been done with the prior art Hi-Flo and Hi-Cap filters or that the pockets could be made of two halves or two pieces and that he cannot see the back or the wedged edge in the rear on the filter shown on RTX-006 (FF 95); that he cannot unequivocally say that the three horizontal lines on the side of the top RTX-006 illustration that extend from the frame header back towards the back end of the filter is a welding as opposed to a sewing (FF 96); that while he sees wedge shaped supports between the sides of the pleats on an illustration shown in RTX-006, he is unable to tell what the supports are made of and cannot tell for certain how the wedge shaped supports are adhered, if in fact they are adhered to the sides of the filter pocket (FF 97); that when asked whether he sees something of a pyramid shape, Bauder testified that he sees something that appears to be "triangular in shape" and

---

[14] Paragraph 21 and 22 of the Bauder witness statement (RTX-001) and paragraphs 18 and 19 of the Rivers' witness statement (RTX-002) relate to RTX-006. A comparison of Bauder's paragraphs 21 and 22 with Rivers' paragraphs 18 and 19 respectively shows that the Bauder's and Rivers' paragraphs are substantially identical in language.

"[r]elatively flat" (FF 98); that he can't tell from RTX-006 how the lines thereon are formed (FF 98); that he supposes that the wording "welded filter bags" on RTX-006 could refer to the attachment of the filter pocket to the front holding frame (FF 99); and that he cannot tell from RTX-006 that there is welding at the wedge edge in the back. (FF 99).

Based on Bauder's testimony, the administrative law judge finds that respondents have not established that RTX-006 invalidates the '375 patent as an anticipating reference under 35 U.S.C. §102(b), assuming that respondents had established that RTX-006 was a "printed publication" under 35 U.S.C. §102(b). Anticipation under 35 U.S.C. § 102 requires the presence in a single prior art disclosure of each and every element of a claimed invention. Prior to the Patent Act of 1952, "anticipation" was used in a broader sense than it is today. Today it is a restricted term of art in patent law. Lewmar Marine, Inc. v. Barient, Inc. 827 F.2d 744, 3 U.S.P.Q. 2d 1766, 1767, 1768 (Fed. Cir 1987). Kalman v. Kimberly-Clark Corp., 713 F.2d 760, 772, 218 U.S.P.Q. 781, 789 (Fed. Cir. 1983), relied on by respondents (R Post at 6, 7), requires that "all limitations" of the claims in issue "be found in the [anticipatory] reference, or [are] 'fully met' by it". The testimony of Bauder, who was qualified as an expert in air filter construction and end design (FF 114) and is an inventor on the '059 patent (FF 123), indicates at least that the claim limitations of "fusible" fibers and of "welded" laminar spacing elements with the spacing elements being welded to the opposite inclined wedged faces are not found or are not fully met by RTX-006.

6. 35 U.S.C. § 103

Respondents argue that to the extent that RTX-006 does not alone anticipate the '375 claims, it serves as a "solid" reference for obviousness purposes and that RTX-006 when coupled with the detailed disclosure of the Bauder Hi-Flo and Hi-Cap patents, viz. the '059 Hi-Flo patent and the U.S. Patent Nos. 3,273,321 (the '321 patent) and 3,485,694 (the '694 patent), (the Hi-Cap patents) render the '375 claims obvious. Alternatively, it is argued that the Bauder '059 patent and the Hi-Flo filter itself, which was in public use and on sale within the United States more than one year prior to complainant's application for the '375 patent, have all the essential features claimed in the '375 patent; and that one of ordinary skill would find in the Hi-Cap '321 patent and/or American Air Filter's Dri-Pak 2540 and 2530 filters both the teaching and the motivation to convert the Hi-Flo design into "exactly what the '375 patent claims." (R Post at 11 to 17).

A patent may be held invalid if the invention claimed does not satisfy the requirement for nonobviousness of 35 U.S.C. §103 which reads in pertinent part:

> A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Graham v. John Deere Co., 383 U.S. at 17-18, 148 U.S.P.Q. at 467 articulated the test for determining obviousness under §103:

> [T]he scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the art resolved. Against this background, the obviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. As indicia of obviousness or nonobviousness, these inquires may have relevancy....

Thus obviousness is a question of law based on factual inquires. Akzo N.V. International Trade Commission, 808 F.2d at 1480, 1 U.S.P.Q. 2d at 1246.

In considering the issue of obviousness, the record establishes that in the initial prosecution of the '375 patent, the Bauder '059 patent relied on by respondents was cited by the Examiner to show the state of the art. (FF 26). Thereafter in remarks filed on March 31, 1977, the Bauder reference was discussed in some depth. (FF 29). After the '375 patent issued, the Examiner in the reexamination proceeding, while initially taking the position that there was raised a substantial question of patentability of claims 1 and 2 in issue in view of the Bauder '059 patent when taken with other art, reversed himself. (FF 39, 41). In the reexamination proceeding the owners of the '375 patent brought to the attention of the Examiner a 1978 product bulletin on Hi-Cap 90/35 and Hi-Cap 80/25 although there is no indication in the record that the Examiner was aware that sides of the Hi-Cap filter depicted in the bulletin were welded. (FF 38).

Where, as here, the '375 patent has been reexamined under 35 U.S.C. §301-307, the presumption of validity again remains unaltered. Respondents, as the challengers, must not only come forward with evidence of a prima face case of invalidity, but ultimately prove facts under a clear and convincing standard, that support a conclusion that the '375 patent is invalid. Kaufman Company Inc. v. Lantech, Inc., 807 F.2d 970, 1 U.S.P.Q. 2d 1202, 1204 (Fed. Cir. 1986).

(a) Scope and Content of the Prior Art

As prior art, respondents rely on RTX-006, the '059, '321 and '694 patents, the Hi-Flo filter itself and American Air Filter's Dri-Pak filters.

The content of RTX-006 is seen in the English translation of RTX-006, duplicated in its entirety, at FF-60.[15/]

The '059 patent, titled "Pocket Filter", issued on June 22, 1965 to Carl J. Bauder and Charles G. Hart and is based on an application filed on May 3, 1962. (FF 123). According to the '059 patent its invention is directed to a filter cartridge construction wherein any need for supporting grid work is eliminated, and in which the extended areas of flexible filter media are arranged in a multiple pocket form, the pockets of which are partly sustained, during air flow, by the inflation effect resulting from differential pressure. When the air flow is terminated, the multiple pockets of the filter, being flexible, tend to fold and can be folded out of the way. (FF 124).

Each pocket of the filter disclosed in the '059 patent may be formed of a single relatively long rectangular sheet of filter media which may be folded to form two flanks. The side edges of the flanks are stitched togther or "otherwise secured" along the top or bottom edges. (FF 124).

The filter cartridge is said in the '059 patent to be further composed of a casing, in which the open ends of a plurality of like pockets are mounted and vertically disposed, and arranged side by side, and in which each individual pocket comprises an elongated fold of filter media to form the vertical pocket with each such pocket provided with a series of horizontally

---

[15/] Respondents have not established chat RTX-006 is prior art under 35 U.S.C. § 103. See, In re Mc Kellin, Mageli, and D'Angelo, 529 F.2d 1324, 188 U.S.P.Q. 428, 433 (CCPA 1976); In re Harry, 333 F.2d 920, 142 U.S.P.Q. 164, 167 (CCPA 1964) and section 5(a) at 20 to 37 of this initial determination.

93

extending rows of filamentary stays of gradually decreasing length from the upstream end of the pocket. The stays are said to serve to control the spacing between the flanks of each pocket, to prevent intercontact between adjacent flanks of adjacent pockets and further to serve to assist each pocket, when inflated from differential pressure, into assuming a symmetrical form about a vertical plane, with the adjacent flanks thereof lying substantially in planes converging downstream at the tip end of each pocket. (FF 124).

The '059 patent also discloses that each row of stays may in effect take the form of stitching, wherein the spacing between stitches is substantially uniform, but wherein each stitch comprises the stay portion, the length of which progressively decreases from stitch to stitch from the open end of the pocket to the downstream end thereof. The stitching employed to form such stays may be of the chain stitch type. The rows of stays of uniform spacing and of gradually diminishing length are said to co-act with the flexible media to provide, when inflated by the differential pressure of the air stream, a series of outstanding pockets, separate from and spaced from each other. Each pocket has its flanks gradually converging in the direction of air flow, and the rate of flow within each pocket from inlet end to tip end is quite uniform by reason of the uniform escape of air through the media flanks. The '059 patent further discloses that while chain stitching for forming the stays has been referred to as an economical and desirable mode of constructing the pockets, any suitable form of stitching which will produce the stays may be employed, the purpose of the stitching being merely to provide a means for forming rows of stays which will be effective when taut to cooperate with the flanks of the filter media in providing symmetrical support for the pockets,

when inflated by differential pressure resulting from the air stream flowing through the media; and that in fact, while stitching is found to be an economical means for providing means to fix the spacing between the flanks in the converging manner described, instead of rows of stays, webbing, thin flexible sheet material, perforate or otherwise, which can be employed in the form of long tapered fingers, the side edges being sewed or otherwise secured to the opposite flanks to provide the graduated converging spacing. (FF 124).

The '059 patent further discloses that each of the pockets of the claimed filter can be self-supporting from the casing and differential pressure created by the air stream. (FF 128). Thus once the pocket filter is subjected to an air stream, and consequent differential pressure, the pockets in unison become inflated to the extent permitted by the filamentary stays, and each pocket becomes self-supporting in parallel arrangement, and substantially symmetrical about a vertical central plane extending downward perpendicularly from the plane of the casing. (FF 128).

The '059 patent covers the Hi-Flow filters which are physically represented by CPX-11 and CPX-11(a). (FF 132, 139). The Hi-Flo filter, according to inventor Bauder, is made of fiber glass media and was developed from experience gained during the late 1950s from the Cambridge Rigid Aerosolve and folding Aerosolve filters which filters were pleated type filters designed to fit into a wire frame. Bauder testified that those Aerosolve filters, although fairly successful, had problems due to cost and cumbersomeness; and that the required wire frame was intricate and mating replacement filters into the frame was cumbersome and tedious. (FF 134). The Hi-Flo filter, disclosed in the '059 patent, has no wire supports and Bauder in that patent was trying to get away from the wire supports. (FF 135).

95

As shown by CPX-11(a), the pockets of the Cambridge Hi-Flo filter may be made of stitched or sewn wedge-shaped sections. (FF 133). While the '059 patent teaches that, if desired, the upper edges of each of the pockets of the Hi-Flo filter may be tied together with a flexible tape secured to the midpoint of the upper edge of each pocket, the tape is not a requirement as seen by CPX-11(a). (FF 126).

In the Hi-Flow filter, the filamentary stays do not prevent pockets from collapsing towards each other nor do they "stiffen" the faces of the pocket. Moreover as taught in the '059 patent, the free ends of the filter pockets tend to fold over gently and depend downwardly. (FF 138, 142). However, the '059 patent states that each of the filter pockets becomes self-supporting once the pocket filter is subjected to an air stream and consequent differential pressure. (FF 128, 129, 142).

The '321 patent titled "Air Filter Having A Replaceable Cartridge" issued September 20, 1966 to Bauder, Hart and Douglas R. Clemenshaw and is based on an application filed August 26, 1963. (FF 147). The Hi-Cap filter was the subject of the '321 patent. (FF 146).[16]

The Hi-Cap filter must have a filter media wire support grid attached to the down stream side of a frame. A filter media cartridge composed of porous nonwoven fusible filter media is formed with pockets for insertion into the wire support grid. In forming the pocket a folded layer of filter media is fused along narrow strips which in turn become the side seams of the pocket and thus close the side edges. (FF 148).

---

[16] The '694 patent is based on an application that was a division of the application for the '321 patent. Hence the specifications of the '321 and '694 patents are identical. (FF 146).

The Hi-Cap filter, compared to the Hi-Flo filter, is a relatively low efficiency filter, i.e. it has a lower ability of removing air borne dust particles. (FF 174).

The Dri-Pak 2540 filter pocket relied on by respondents is constructed by folding a section of pre-cut media comprising nonwoven synthetic fibers and heat sealing the two edges. The filter pocket is further divided into "tubes" by heat sealing (welding) the two layers of media together at regular intervals. The construction of the Dri-Pak 2530, which uses an all nonwoven synthtic media, is similar. (FF 188). Respondents' Rivers (FF 116, 117) obtained U.S. Patent 2,853,154 (the '154 patent) on September 23, 1958 on an application filed on August 27, 1956 (FF 183). The '154 patent is directed to an early design of the Dri-Pak filter which filter was initially made of fiber glass (FF 15, 182). As characterized, in essence, in the '375 patent, the Dri-Pak filter has the opposite sides of its pockets joined directly to one another by tack stitching or continuous stitching. The '375 patent teaches that the effective filter area of said filter and flow of air into the pockets are reduced and the resistance of the filter to the passage of air is increased. (FF 194). The '154 patent was cited by the patent owners in the '375 patent reexamination proceedings. (FF 43).

(b) Differences Between the Prior Art and the Claims in Issue

While the Hi-Flow pocket filter, which is the outgrowth of the '059 patent filed for on May 3, 1962 (FF 132, 139), is made of fine filtering filaments such as fine fiber glass (FF 138), the claimed gas filter in issue is made of fusible fibers. (FF 12). This limitation was expressly incorporated in the sole independent claim 1 through an Examiner's amendment dated May 18, 1977. (FF 30). Moreover while each wedge shaped pocket of the Hi-Flo filter comprises an elongated stitched or sewn fiber glass to form the vertical pocket with each such pocket provided with a series of horizontally extending rows of filamentary stays of gradually decreasing length from the upstream end of the pocket (FF 124), each wedged shaped pocket of the claimed filter comprises a pair of substantially symmetrical pocket halves welded to one another along the wedge edge and centrally along the opposite wedge end faces. (FF 12). In addition, in the claimed filter, and not found in the Hi-Flow filter, is at least one laminar spacing element disposed within each pocket which spacing element extends from adjacent the open end of the pocket towards the wedge edge and with said spacing element being welded to the opposite inclined wedge faces. (FF 12).

While the Hi-Cap filter, which is the outgrowth of the '321 patent filed on August 26, 1963, requires a filter media wire support grid of the type shown by CPX-9 (FF 148, 154, 158, 159, 160, 161, 162) into which filter media cartridges are installed (FF 148), the claimed gas filter in issue does not have such a wire support grid. (FF 12). In addition, while the Hi-Cap filter pocket is formed by fusing a folded layer of filter media along narrow strips which become the side seams of the pocket and thus close the side edges to form the pocket, the claimed filter comprises a pair of substantially symmetrical pockets halves welded to one another along the wedge edge and centrally along the opposite wedge edge faces. (FF 12). Moreover the Hi-Cap filter lacks any laminar spacing element. (FF 158).

The Dri-Pak 2540 and 2530 filters lack the laminar spacing element of the claimed filter in issue. (FF 189). In addition, rather than welding a pair of substantially symmetrical pocket halves in the manner described in the

98

claims in issue (FF 12), the Dri-Pak filter pocket is constructed by folding a section of pre-cut media and heat sealing or fusing the two edges, and the pocket is further divided into "tubes" by heat sealing the two layers of media together at regular intervals. (FF 188, 194).

Differences between RTX-006 and the claimed filter have been set out earlier in section 5(b) of this initial determination at 38-39.

(c) Level of Ordinary Skill in the Art

Relying on testimony of respondents' experts Bauder and Rivers, respondents consider a person of ordinary skill in the air filter art to have had two-to-four years of actual design and construction experience. (RPF 148). Both Bauder and Rivers testified that someone with a formal technical education could claim ordinary skill more quickly. (FF 121, 122). The staff considers that the educational level of those generally skilled in the gas filter art at the time of the '375 patent is a minimum of a college education and that a person of ordinary skill have several years of production and design experience in the filter field. (SPF 167).

The Federal Circuit has stated that a person of ordinary skill in the art is presumed to be one who thinks along the line of conventional wisdom in the art but is not "one who undertakes to innovate, whether by patient, and often expensive, systematic research or by extraordinary insights". It is only a hypothetical person who is presumed to be aware of all the pertinent prior art. Standard Oil Company v. American Cyanamid Company, 774 F.2d 448, 454, 227 U.S.P.Q. 293, 297-98 (Fed. Cir. 1985). It is up to the administrative law judge to determine the level of skill of the hypothetical person, what that person would have been able to do when in possession of the prior art, and the scope and contents of the prior art. Id.

The air filter business is neither labor nor capital intensive. (FF 122). The administrative law judge finds that a person of ordinary skill would be aware of all pertinent prior art and have, either through working experience or an educational level, an understanding of the operation and design of the Hi-Cap, Hi-Flo filters and Dri-Pak filters.

(d) Combining of References

Respondents have argued that the RTX-006 disclosure provides the overall design and function of the claimed filter and that this disclosure when coupled with the detailed disclosure of the Bauder Hi-Flo and Hi-Cap patents render the '375 claims obvious. (R Post at 12). Respondents have summarized their obviousness argument as follows:

> Respondents experts presented uncontradicted evidence that the Cambridge Hi-Flo filter and the Bauder '059 patent disclosing its design include the substantial features of the claims in suit ...., the only substantive difference between the claims in suit and the Bauder Hi-Flo design and '059 disclosure lies in the use of welding as an assembly method. That the use of welding to assemble pocket filters was known is conclusively proven by the Hi-Cap '321 disclosure and the AAF Dri-Pak 2500 design. Finally the motivation to modify the '059 design to include the welding features recited in the claims is provided by both the '321 disclosure and the AAF Dri-Pak 2500 design. [R Post R at 5].

Complainant argues that there is an absence of any teaching to combine the prior art references. (C Post at 20-21). The staff argues that the differences in construction of filters made in accordance with the '375 patent and in accordance with the prior art have led to the claimed filters which are unique and offer significant advantages over the prior art devices. (S Post at 20-21).[17/]

[17/] Neither complainant nor the staff argue that the disclosure of RTX-006, assuming RTX-006 is prior art under 35 U.S.C. §103, coupled with the Bauder Hi-Flo and/or Hi-Cap patents do not make the claimed invention obvious under 35 U.S.C. §103.

The issue of obviousness is determined not from the testimony of experts but entirely by reference to a hypothetical "person having ordinary skill in the art". An actual inventor's skill is irrelevant to the inquiry because the statutory emphasis is on a person of ordinary skill, and inventors, as a class, according to the concepts underlying the constitution and the statutes that have created the patent system, "possess something -call it what you will- which sets them apart from the workers of ordinary skill" Standard Oil Company v. American Cyanamical Company, supra. Respondents have the burden in establishing that the references used in combination to establish invalidity must show some teaching or suggestion within the references, to the hypothetical person of ordinary skill in the art, which supports using the references' teachings in combination. Ashland Oil, Inc. v. Delta Resins & Refractories, 776 F. 2d 281, 293, 227 U.S.P.Q. 657, 664 (Fed. Cir. 1985); W. L. Gore & Associates Inc. v. Garlock, Inc., 721 F. 2d at 1551, 220 U.S.P.Q. at 311.

As for respondents' argument with respect to the combination of the Hi-Flo and Hi-Cap prior art, the administrative law judge finds that the record does not support a finding that the only "substantial difference" between the claims in issue and the Hi-Flo filter to a person of ordinary skill in the art is in the use of welding as an assembly method. As the Examiner found in the reexamination proceeding:

> Claims 1 and 2 ... define a laminar element in each of the filter pockets which is welded between faces of pocket. The pockets are formed of fusible fibers and the laminar element extends from a adjacent the open end towards the wedge edge of the pockets .... Bauder et al 3,190,059 stitches filamentary stays between the faces of the pocket and does not teach welding a laminar [spacer] element

101

extending between faces from open end towards wedge end of the pocket. (FF 41) (Emphasis added)

See, American Hoist & Derrick Co. v. Sowa & Sons, Inc. 725 F.2d at 1364, 220 U.S.P.Q. at 774 (the Patent Office is a qualified government agency presumed to have properly done its job, which includes one or more examiners who are assumed to have some expertise in interpreting the reference and to be familiar from their work with the level of skill in the art and whose duty it is to issue only valid patents). Thus it is where and how the welds are made in the claimed filter in issue and the claimed filter's structural stability that are unique to the filter. It is not merely the process of welding. (FF 171, 200).

The administrative law judge finds nothing in the prior art that suggests a pocket filter wherein there is defined a laminar spacer element in each of the filter pockets which is welded between faces of the pocket and wherein the pockets are formed of fusible fibers and the laminar element extends from adjacent the open end towards the wedge edge of the pockets which the Examiner has held independent claim 1 so defines. (FF 12, 41). As complainant's Bergman testified,[18] the Hi-Flow filter has spacers which are filamentary stays that have a fixed length. As the Hi-Flow filter pocket expands with the

---

[18] Respondents argue that in view of Bergman's "qualifications" and certain of his testimony, his opinions should be accorded little weight. (R Post at 17 to 19). Bergman, who holds a Ph.D in physical chemistry, was qualified as an expert in gas filtration and gas filters without objection by respondents. (FF 119). He has been actively involved in outside consulting work relating to gas filtration and has consulted for government agencies as well as major corporations. He is the sole patentee on four U.S. patents involving filters. He has actually designed many models of a general ventilation filter equivalent to the Hi-Flo filter or complainant's T-60 filter. (FF 119, 120). With respect to his testimony, he testified that the frame CPX-9 plus the orange swab CPX-9a represent the equivalent to a Hi-Cap filter. (FF 162). Moreover respondents' waived their right to cross examine Bergman on the substance of Bergman's rebuttal testimony See Tr. 761 to 773. The

(Footnote continued to page 52)

102

air flow, the media is abruptly restrained by the spacer and may cause tearing. (FF 141). Respondents' expert Bauder admitted that in operation tearing "could" occur where the filamentary stays are attached. (FF 144). In contrast, the '375 patent teaches the use of a laminar spacer that does not have fixed distances for the pocket separation and can accommodate abrupt changes in air flow without causing the media to tear. (FF 172). Thus as in the Freudenberg T-90, F-45 and MF-90 filters, the laminar spacing elements are, on both sides, continuously welded to the filter pocket sides along most of their longitudinal direction (front to back). This not only stiffens the filter mats themselves and makes their shape more rigid but brings about an evening out of the air flow within the filter pocket. (FF 235). The respondents have cited no art that even suggests the use of laminar spacing elements in any filter. Also respondents admit to stiffening lines corresponding to fusion welds of the individual spacing elements (RPRFC 72 w). Neither respondents' Bauder or Rivers denied that the welding of the spacer media provides a stiffening at the attachment of the spacer and side weld of the pocket. (FF 200a).

In addition, the provision of a laminar spacer element of pyramidal form, constituting tubular elements running, with diminishing diameter, from front to back in the filter pocket, as called for by claim 6 (FF 12), provides an "air cushion" which gently holds the opposed inside faces of each filter pocket so that they do not move significantly toward or away from each other. Such a spacer construction in practice, provides structural support to the whole assembly longitudinally, vertically and laterally, and further provides a dampening effect on swinging or fluttering movements of the filter mats or

---

(Footnote continued from page 51)
administrative law judge rejects respondents' contention that the testimony of Bergman, referred to in this initial determination, should be accorded little weight.

other oscillations, such as resonant vibrations, caused by air flow through the filter assembly. Even abrupt changes in air velocity blowing into the filter do not result in undesirable side to side oscillations. (FF 235). The action of such spacers is different from the action of the filamentary stays of the Hi-Flo filters which lack the multidirectional stablizing effect of the Freudenberg spacers, and have a yanking effect with stress at their points of attachment to the filter pockets when the pocket sides are suddenly blown apart by an increased air velocity. (FF 235).

Also it is a fact that the Hi-Flo filter, as described in the trade literature and the '059 patent and as represented by all models of the Hi-Flo filter, is made of fiber glass. If fiber glass is subjected to welding it becomes brittle and non-functional. Hence it has to be sewn as is done with the Hi-Flo filters. (FF 140). Respondents have cited no prior art that suggests that the fiber glass used in the '059 patent can be substituted with nonwoven fabric. Moreover the joining of nonwoven material can be done by stitching as well as welding. (FF 133). Thus, assuming a suggestion in the prior art that nonwoven fabric could be substituted for the fiber glass of the Hi-Flo filter disclosed in the '059 patent, there is no suggestion that the nonwoven fabric should be joined by welding rather than by stitching.

Respondents argue that the "motivation" to modify the '059 design to include the welding features recited in the claims in issue is provided by both the '321 disclosure and the Dri-Pak 2500 design (R Post R at 5). However neither the '321 patent nor the Dri-Pak 2500 design discloses any spacer, much less the particular welding features of the laminar spacing element of the claimed filter in issue. (FF 175). Moreover there is testimony from respondents' expert Bauder that supports the finding that motivation was lacking in the absence of the teaching of the '375 patent. Thus Bauder testified:

> Q And you wrote the Hi-Cap patent [filed on Aug. 26, 1963 (FF 147)] after you wrote the Hi-Flo patent [filed on May 3, 1962 (FF 123)]
>
> A Correct.
>
> Q And it never even occurred to you to put the disclosure of spacers or stays in the Hi-Cap patent, right?
>
> A They aren't the same product.
>
> Q Exactly. That's my point.
> And you were happy with the Hi-Flo filter for many years, right?
>
> A Yes, sir.
>
> Q Still happy with it today?
>
> A. Yes, sir.
>
> Q Have been for many years?
>
> A Yes, sir.

(Emphasis added) (FF 175). Hence while the Hi-Flo '059 patent issued on June 22, 1965 and the Hi-Cap '321 patent issued on September 20, 1966 (FF 123, 147), it was not until September 17, 1975 that the German priority application for the '375 patent was filed. (FF 11). Yet Bauder, who developed the Hi-Cap and Hi-Flo filters (FF 115) which Cambridge Filter Corporation currently sells (FF 115) and has since 1963 (FF 152),[19/] had been happy with the Hi-Flo and Hi-Cap filters for at least some eleven years. He did not modify one in view of the other because they weren't the same product.[20/] Bauder is one who has been active in filter design and intimately familiar with his own prior

---

[19/] Cambridge also sells respondents' products. (FF 115).

[20/] The Hi-Cap filter relative to the Hi-Flow filter is a relatively low efficiency filter. (FF 174). Moreover the Hi-Cap filter requires the presence of a wire-support grid. (FF 148, 150, 158).

105

art '059 and '321 inventions. (FF 115, 123, 146). Yet he failed to combine their teachings to make a self-supporting wedge-shaped pocket filter from fusible fiber media. Bauder's experience substantiates the non-obviousness of the claimed subject matter in issue, as contrasted with his hindsight testimony. See, Rosemount Inc. v. Beckman Instruments Inc., 727 F.2d 1950, 221 U.S.P.Q. 1, 7 (Fed. Cir. 1984).

Respondents argue that at first the Dri-Pak filters were made of glass, but before 1973 Dri-Pak 2540 and 2530 filters which were constructed of nonwoven filter media with welded seams were introduced (RPF 103). Those filters however continued to use pocket stitching to prevent ballooning. (FF 194). There was no attempt to use any type of spacer in said filters although the concept of filamentary stays to prevent billowing had been publicly known since at least 1965. (FF 123).

When prior art references require selective combination to render obvious a subsequent invention, there must be some suggestion or incentive in the prior art references supporting the combination other than the hindsight gleaned from the invention in issue. ACS Hospital Systems, Inc, v. Montefiore Hospital, 732 F.2d at 1577, n. 14, 221 U.S.P.Q. at 933, n. 14. There also must be "something in the prior art as a whole to suggest the desirability, and the obviousness, of making the combinations". Lindermann Maschinenfabrik Gmbh v. American Hoist and Devrick Co., 730 F.2d 1452, 1462, 221 U.S.P.Q. 481, 488 (Fed. Cir. 1984). Other than through the hindsight gleaned from the '375 patent, the administrative law judge can find nothing in the prior art relied on that suggests the desirabilitiy and the obviousness of making the alleged combination. At best, in view of the Hi-Flo, Hi-Cap and Dri-Pak prior art, one skilled in the art might find it obvious to try various combinations which would involve welding nonwoven material. However even those combinations would lack the laminar spacing element. Moreover an "obvious to try" is not the standard of 35 U.S.C. §103. In re Geiger, 815 F.2d 686, 2 U.S.P.Q. 2d 1276, 1278 (Fed. Cir. 1987).

106

Based on the foregoing the administrative law judge finds that respondents have not sustained their burden in establishing that a combination of the prior art Hi-Flo and Hi-Cap disclosures makes the claimed invention obvious to the hypothetical person of ordinary skill in the art.

Referring to respondents' argument with respect to the combination of RTX-006 and the Hi-Flo and/or Hi-Cap prior art, the pictures depicted on RTX-006 do suggest at least a rigid filter bag unit in the absence of any metal support grid and laminar spacing units attached to the opposite sides of the pockets and extending from adjacent the open pocket end toward the wedge edge of the pockets (FF 60). There is also references in RTX-006 to "welded filter bags" and "synth fibers". Use of welded non-woven synthetic fabric in the formation of pocket filters is shown by the Hi-Cap prior art. Based on the foregoing, and assuming respondents had established that RTX-006 is prior art under 35 U.S.C. §103, the administrative law judge finds that a combination of RTX-006 and the Hi-Cap prior art would make claims 1, 2, 3, 4, 7, 8 and 9 obvious to the hypothetical person of ordinary skill in the art.

(e) Objective Indicia of Nonobviousness (Secondary Considerations)

Complainant argues that the following objective indicia support a finding that respondents have not established that the claimed subject matter in issue is obvious: (a) the failure of others to utilize the available prior art to make the patented invention, (b) copying and (c) commercial success (C Post at 21 to 25, CPF 115 to 117). The staff, in addition, argues that Freudenberg's competitors for the most part have respected the '375 patent which issued on November 1, 1977 (FF 11) in that the record does not contain any evidence showing that any entity, other than respondents, have infringed the '375 patent during its eleven year existence and that infringement by respondents only commenced after the rejection of Freudenberg's corresponding German application became final on October 4, 1983. (SPF 169 to 176). The respondents propose no rebuttal findings to the proposed findings of complainant and the staff on objective indicia other than proposing that the Cambridge Hi-Flo filter discloses the "essential features" claimed in the '375 patent, and that the filter described and claimed by the '375 patent is "essentially" the Hi-Flo filter made of nonwoven material with heat sealed edges. (RPRFS 26)

The administrative law judge finds that there has been a failure of others to utilize the long publicly available prior art to make the patented invention. (FF 175). Moreover there are indications that respondents copied complainant's patented design. Thus it was only after respondents tested complainant's product that a prototype of the alleged infringing filter was produced. (FF 60, 206, 207, 208). Moreover a comparison of the alleged infringing filter CPX-1 and complainant's CPX-5, illustrative of a claimed filter, shows a striking resemblance. Finally there is evidence of commercial success through complainant's use of the claimed invention. (FF 202, 203, 204).

Based on the foregoing, the administrative law judge finds that there are objective indicia which support a finding that respondents have not established that the claimed subject matter in issue is obvious under 35 U.S.C. §103.

(f) Validity of the Claims In Issue

Based on the foregoing the administrative law judge finds that the totality of the evidence establishes that respondents have not sustained their burden in establishing that the claims in issue are invalid under 35 U.S.C. §103.

7. 35 U.S.C. § 112

Respondents argue that the claims of the '375 patent are invalid and/or unenforceable pursuant to the second paragraph of 35 U.S.C. §112, as being vague and indefinite. It is argued that while claim 1 in issue recites "at least one self-supporting wedge-shaped filter pocket," the specification of the '375 patent fails to clarify this recitation in any meaningful way and that the only references in the specification to this recitation consist of conclusory statements which simply set out the desire to make the filters self-supporting. It is further argued that the degree required by "stiffened", as recited in claims 4 and 9, is not clear and that the term "pyramidal" spacing element recited in claim 6 has no ordinary meaning in the art nor does it find antecedent support in the specification. (R Post at 25 to 27).

Complainant argues that its Janke, who is familiar with commercial filters, testified that self-supporting meant self-supporting in operation and hence that the term "self-supporting" is not indefinite. (C Post at 4). The staff argues that respondents have not established that the '375 patent is invalid under 35 U.S.C. §112. (S Post R at 6 to 8).

The second paragraph of 35 U.S.C. § 112 reads:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

The specification of the '375 patent states that that the claimed pockets have "self-supporting properties in the air stream". (FF 17). Moreover the specification discloses that the welding of the pocket half and spacer attachment seams are means of stiffening the pockets to give them self-supporting properties. (FF 17, 18).[21/] There is no serious dispute

---

[21/] The individual pockets of complainant's model MF-85 pocket filter, which is part of the domestic industry, when supported only by its frame and without

(Footnote continued to page 59)

that the pockets of the claimed subject matter in issue are at least self-supporting in the air stream. Respondents admit that, according to the '375 patent, "self-support" is determined in the air stream. (R Post at 20; RPF 22). Complainant admits that "self-supporting" meant self-supporting in operation. (C Post at 4). Moreover, when the '375 application was filed on September 3, 1976 the term "self-supporting" was recognized in the filter art. Thus the Bauder '059 patent states:

> However, once such assembly is subjected to an airstream, and consequent differential pressure, the pockets in unison become inflated to the extent permitted by the stays, and all pockets become self-supporting in parallel arrangement, and each pocket becomes substantially symmetrical about a vertical central plane extending downstream perpendicularly from the frame of the casing. (Emphasis added) (FF 128).

Respondents' experts stated no difficulty in applying the term "self-supporting" to the prior art (FF 129, 130) See, Rosemont, Inc. v. Beckman Instruments, Inc., 727 F.2d 1540, 221 U.S.P.Q. 1 (Fed. Cir. 1984). In other words in the Hi-Flo filter filamentary stays are attached to the opposite inclined wedge faces whereby the filter pocket is rendered self-supporting. Hence a backup wire grid, as found in the Hi-Cap filter (FF 148, 150, 158), is not needed. (FF 124).[22/]

(Footnote continued from page 58)
integrated support (metal rods) do tend to collapse laterally against each other under no air flow conditions. The individual pockets of complainant's model F-45, which is also part of the domestic industry and which has no integrated support, do not tend to so collapse. (FF 201, 201a). Complainant has had a problem of corrosion with the metal rods which are for ease of putting in and taking out a filter and hence complainant is replacing the MF series with the T-60. (FF 221).

[22/] The record does establish that the type of media, eg. fiber diameter, fiber coarseness and whether the fibers are charged, can affect the rigidity of a filter. Thus the media of RPTX-001 (complainant's MF-85) is finer than the media of CPX-5 (complainant's F-45) and hence when the two filters are sitting on the floor the pockets on the F-45 may be more upright or more rigid than the pockets on the MF-85. (FF 219, 222).

While respondents argue that the degree required by "stiffened" as recited in claims 4 and 9 is not clear, the claims specifically state "stiffened by fusion". Fusion, such as by heat sealing, was known in the art when the '375 application was filed on September 3, 1976. (FF 149).

The claimed term "pyramidal" has antecedant support in the '375 specification (FF 17) and even in the original claims as filed on September 3, 1976. (FF 25). Moreover while the record establishes that the inventors are the first to use the word "pyramidal" to describe a spacing element for a pocket filter, the word "pyramidal" is not a term foreign to the English language.[23]

The administrative law judge finds that the claimed recitations "at least one self-supporting wedge-shaped filter pocket," "stiffened" and "pyramidal" are not vague and indefinite and that the claims in issue, when read in light of the specification, do reasonably apprise to those skilled in the art the utilization and scope of the claimed invention. Hybritech Inc. v. Monoclonal Antibodies, Inc., 802 F. 2d 1367, 1385, 231 U.S.P.Q. 81, 94 (Fed. Cir. 1986), cert. denied, 107 S. Ct. 1606 (1987).

Based on the foregoing, the administrative law judge finds that respondents have not sustained their burden in establishing that the claims in issue are so vague and indefinite that they are invalid and/or unenforceable under 35 U.S.C. § 112.

8. 35 U.S.C. § 116

Respondents argue that the '375 patent is invalid because complainant Freudenberg failed to correctly identify the names of the "true inventors" of the '375 patent. Respondents contend that unnamed inventors Richter and his supervisor Huber conceived the basic original idea for the claimed pocket filter in issue in May 1983 and were actively, continuously and closely involved in the filter's development thereafter. They note that Richter was the first at Freudenberg to contact its patent specialist about applying for a patent on the development. Respondents point out that a September 1975 initial Notification of Invention signed by the head of the development division of complainant's corporate affiliate Firma Carl Freudenberg (the original assignee of the '375 patent) identified Richter and five other persons unnamed on the '375 patent who together were characterized as contributing 30% of the "inventive participation" in the Freudenberg compact filter. Respondents also point to the fact that Richter was paid a 5% royalty by Freudenberg for his role in the development of the Freudenberg pocket filter, and thus was recognized by Freudenberg as an inventor pursuant to its normal practice of recognizing inventorship. (R Post at 27 to 29).

---

[23] Webster's Seventh New Collegiate Dictionary (1965) relates "pyramidal" to an "immaterial structure built on a broad supporting base and narrowing gradually to an apex."

Complainant argues that the inventors named in the '375 patent are presumed to be the correct inventors and that the testimony of its patent agent Moldenhauer who participated in the "patent application", the testimony of Richter, and a contemporaneous notification of invention form signed by the named inventors and other participants establish that the Freudenberg patent department named the proper inventors on the '375 patent. (C Post at 25 to 28).

Alternatively, complainant contends that even if Richter is deemed an inventor, the failure to name him was without any deceptive intent on the part of Freudenberg and its employees, and so the '375 patent cannot be invalidated on that basis. (C Post at 26).

The staff argues that Richter was not an inventor and that his testimony shows that he merely contributed the suggestion that Freudenberg should produce pocket filters with synthetic frames using the nonwoven filter media it was already producing. (S Post at 25, 26).

In reply, respondents argue that there is deceptive intent in the deliberate omission of inventors as indicated by the notification of invention document. Alternatively, respondents argue that no deceptive intent is necessary for unenforceability, citing Certain Apparatus for the Continuous Production of Copper Rod, 206 U.S.P.Q. 138, 152 (Comm. Opin. and adopted RD 1979), and that simple misjoinder is sufficient. (R Post R at 11).[24/]

As set forth in section 111 of title 35 an application for a patent shall be made by the inventor and the inventor shall in his application by oath state that he believes himself to be the original and first inventor of that for which he solicits a patent. Joint inventorship and correction of inventorship are defined and provided for in section 116 of title 35:

[24/] In Copper Rod, Id., the Commission held invalid and unenforceable two patents of the complainant on the basis of the nonjoinder of co-inventor employees of respondents who developed the patented method with complainant in a joint development project between the two companies. The Commission held that the omission of the joint inventors from two patents was not a mere error, and therefore was not correctable under 35 U.S.C. § 256. In Copper Rod, the complainant's nonjoinder of employee inventors of a partner company and the assignment of the patents only to complainant did involve a situation of deceptive private advantage to complainant through its naming of only its own inventors, and hence was no mere error. The Commission went on to hold in Copper Rod that if the two patents were valid and infringed, nevertheless the patents still would be unenforceable by the Commission in view of the complainant's nonjoinder of correct joint inventors; and that even if the nonjoinder of proper joint inventors was correctable under section 256, still the patents were unenforceable until the inventorships were corrected. Section 256 allows correction of inventorship only by the Patent Office and by the district courts.

> When an invention is made by two or more persons jointly, they shall apply for patent jointly and each make the required oath, except as otherwise provided for in this title. Inventors may apply for a patent jointly even though (1) they did not physically work together or at the same time, (2) each did not make the same type or amount of contribution, or (3) each did not make a contribution to the subject matter of every claim of the patent. ...
>
> Whenever through error a person is named in an application for patent as the inventor, or through error an inventor is not named in an application, and such error arose without any deceptive intention on his part, the Commissioner [of Patents and Trademarks] may permit the application to be amended accordingly, under such terms as he prescribes.[25]

The record establishes that the '375 patent issued in the names of inventors Wolfgang Ringel, Peter Rutsch, Rolf Schneider and Edgar Kohl (FF 11); and that Richter while employed at Freudenberg and Kurt Huber, then head sales for of the Viledon filter division, came up with a "basic idea" for a pocket filter to be made by Freudenberg's Viledon division, during a luncheon at the company cafeteria on May 10, 1973. Up until 1975 Viledon filter division produced only nonwoven filter material in rolls and square cutings which was purchased by various filter companies that fabricated these media into pocket filters. Richter testified:

> One particularly advantageous circumstance was the fact that polyurethane was processed in the Synthetic Materials Plant of the Carl Freudenberg company which, as we already knew from filter frame production at Noel, Marquet & Cie. (NMC), Eupen, Belgium, is well-suited for foaming nonwoven

---

[25] The testimony of Richter offered by respondents on the issue of incorrect inventorship indicated that he did not have knowledge about any specific contributions of other "unnamed" inventors in the development of the claimed filter in issue (FF 6). Also no testimony was offered that the inventors named in the '375 patent were not actually inventors, so misjoinder is not at issue. Thus on the issue of inventorship the sole contention is the alleged improper nonjoinder of Richter and Huber as co-inventors of the '375 patent.

> filter media. Our idea here was to foam the various individual filter bags according to [a] pocket filter type in a stabile polyurethane top-frame such that they would be mechanically sturdy and dustfree, which was ultimately realized with success.
>
> * * *
>
> The idea then was the following: To replace the metal frame with a synthetic frame. This was in our opinion no problem for our company because the Freudenberg Company did have a synthetic plants division and within this division, synthetic materials had been produced for quite sometime which would be appropriate for this purpose.
>
> * * *
>
> Such filters as I have just described framed with a synthetic material frame and flat [filter media] had already been produced by the NMC Company in Belguim. And that was the basic idea that gave Mr. Huber and myself the idea, the initiative
> that we could now use such frames as I have described for pocket filters.
>
> * * *
>
> THE WITNESS: Yes. In this manner, then, the Freudenberg Company was in the position to produce filter pockets without having to produce the metal frame for such pocket filters.

(FF 238, 240). Several polyurethane foaming experiments with relevant nonwoven filtering media were then conducted by named inventor Rutsch at Carl Freudenberg's materials plant and the results appeared to be positive. Thereafter Freudenberg's filter division was informed of the "basic idea" and asked to draw up details for the production process. (FF 238).

According to Richter, when he and Huber had this "basic idea", pocket filters were a "state of the art" and "the idea of ourselves producing pocket filters was an obvious one." (FF 238). Also filter frames which were foamed with synthetic materials were also "state of the art" and only "the combination of these things presented a novelty". (FF 241). Richter admitted that when Huber and he first had the basic idea, they "did not have the idea to patent this [basic] idea" and that a number of "detailed problems had to be resolved". Moreover the "gentlemen from the technical department of the Viledon plant and the synthetic materials plant of the filter division, had to overcome problems" and only when the filter was completed did "all gentlemen or most of the gentlemen also express the desire to have this filter patented". (FF 241).

When Richter was directly asked about his specific contribution, other than coming up with the "basic idea", he merely testified:

> A The development of the pocket filters took some time. Mr. Huber and I have had regular and frequent discussions in which all the persons participated from the various departments involved. And I am talking about the departments from the Viledon division as well as the synthetic plastic division.
>
> The various development phases were always talked about jointly and during these discussions, it was always determined which improvements could be made or it was discussed as to in which general direction one could proceed as far as the thought process in concerned.
>
> Mr. Huber and myself, we have participated in these discussions throughout this procedure and we have contributed recommendations as to we have recommendations or certain ideas that could be thought about.

(FF 240). The record is void however of any specific elements of the claimed filter in issue which either Richter or Huber contributed, after their "basic idea" for an end product was discussed on May 10, 1975.

As for the frame in the claims of the '375 patent, independent claim 1 in issue recites that the filter comprises a holding frame and at least one wedge-shaped filter pocket each having its wide end open and secured to the frame. (FF 12). Claim 8 in issue, which is dependent on claim 1, is the only other claim relating to the frame of the filter pocket and it requires a filter according to claim 1, further including a plurality of filter pockets held in a fixed position relative to one another by the single holding frame comprising a molded plastic mass in which the open end perimeters of the pockets are embedded. (FF 12).

In the prosecution of the application for the '375 patent the Examiner initially rejected all the claims as obvious, citing Janson U.S. patent No. 3,422,602 and Nutting U.S. Patent No. 3,386,231, and stated that it would be obvious to mold the frame of Janson to the structure in Nutting. (FF 26). In response to the citation of Janson on March 31, 1977, more than ten years before this proceeding was commenced and while Richter was still employed by Freudenberg (FF 53), complainant merely argued that Janson does not teach or suggest the welding of the spacing elements into the filter pockets to render the pocket self-supporting. (FF 29). No argument was made that it was novel to so mold a frame to the filter media which the administrative law judge finds to constitute the sole contribution of Richter and Huber to the development of the "Viledon" compact filter. Thus the lack of novelty in embedding of the pocket in the frame, as recited in claim 8, was admitted in the response. There is no claim in the '375 patent to the foaming process used to connect the frame to the media (FF 12), as Richter himself admitted. (FF 239).

In its request for reexamination of the '375 patent filed on June 19, 1986 (FF 33) the patentees of the '375 patent brought to the attention of the Examiner two prior art patents which disclose methods similar to the in situ foaming of a rigid frame directly onto the filter pockets. The patentees further admitted that the limitation to a pocket filter in which the open end perimeters were embedded in the frame of dependant claim 8 was "not one of the points of novelty asserted" by them. (FF 36). Moreover the Examiner in the

117

reexamination proceedings made it clear that the patentable combination of specific elements of the claimed invention involved a gas filter element which defines a laminar element in each of the filter pockets which is welded between faces of the pocket with the pockets formed of fusible fibers and the laminar element extending from adjacent the open end towards the wedge edge of the pocket. (FF 41). There is nothing in the record which even suggests that Richter and Huber contributed in any specific way to those specific elements.

Particularly applicable on the issue of improper inventorship raised here is Morgan v. Hirsch, 728 F.2d 1449, 221 U.S.P.Q. 193 (Fed. Cir. 1984), where the Federal Circuit held that the junior party in an interference, one Morgan, had not satisfied his burden of showing (even by a preponderance of the evidence) that Morgan had made an invention involving the use of a circular knitting machine to produce a type of thermal fabric stitch. Morgan had requested that a Spanish manufacturer make a kind of fabric on a circular knitting machine, which had not been done before. Morgan supplied fabric samples of the kind of fabric to the manufacturer and had extensive dealings with the manufacturer, giving unspecified "prodding and instructions" to them. After the receipt and review by Morgan of successive fabric samples, a piece of fabric was made by the Spanish manufacturer which was satisfactory to Morgan. The Federal Circuit held that the junior party Morgan had not conceived the invention of the interference counts at any time and was not shown to be the inventor of the fabric he received. The Court reasoned, in finding that Morgan had not made the invention of the manufacturing process or the particular fabric, that Morgan had only posed the problem for others' resolution. The Court noted that the instructions given by Morgan, which were relied on as constituting invention, were unspecified and that the evidence showed merely a request for an end result fabric made on old circular knitting machines. In summary the Court said:

> We quite understand his layman's point of view, quoted in his brief, that he was the inventor "because if it wasn't for me it [the fabric produced by the Spanish manufacturer] wouldn't be here." But asking someone to produce something without saying just what it is to be or how to do it is not what patent law recognizes as inventing. Neither does it suffice that Morgan's secretary...and his circular knitting machine technician stated their personal, and also lay, conclusions that Mr. Morgan was the "inventor" of the fabric produced by Trabal in Spain. Id. at 195.

Morgan's role in causing the invention to be made was described by the Court as confusing "entrepeneurship" with "inventorship." Id., at 195; accord, Collar Co. v. Van Dusen, 90 U.S. [Wallace 23] 530 (1874) (patent on an improved coated paper shirt collar held invalid due to incorrect inventorship where the named inventor had only requested coated paper of certain qualities from a paper manufacturer, but did not communicate information to the manufacturer concerning the process of manufacture or the ingredients thereof).

Like Morgan who had "extensive dealings" with the manufacturer, Richter and Huber did have continual involvement and discussions with the named inventors of the '375 patent during the course of the development of the claimed filter. However their involvement and discussions are unspecified as to the substance of the claimed invention in issue. As in Morgan such involvement and discussions are found to be wholly insufficient to establish incorrect inventorship.[26] Morgan ruled that a "but for" test of

---

[26] In contrast to the priority contest in Morgan respondents here have a

(Footnote continued to page 69)

participation does not show inventorship, and the general contributions of others may enable, facilitate or provide the initiative for the development of invention without those contributions of others constituting a part of the invention. The fact that an invention would not have been developed without Morgan did not establish his inventorship.

The Federal Circuit in Shatterproof Glass Corp. v. Libbey-Owens Ford Co., 758 F.2d 613, 225 U.S.P.Q. 634,641 (Fed. Cir. 1985) expressly held that:

> An inventor may use the services, ideas, and aid of others in the process of perfecting his invention without losing his right to a patent.

The Supreme Court has analogously held that the use of technical assistants in implementing manufacture, experiments and analyses which were conceived by the inventors and which were crucial to the development of an invention, does not detract from inventorship. Agawam Co. v. Jordan, 74 U.S. [7 Wall.] 583, 602 (1868); Minerals Separation Ltd. v. Hyde, 242 U.S. 261, 270 (1916). The Supreme Court has also found that extensive general cooperative discussions by an inventor with others concerning the subject matter of the invention do not detract from the inventor's own conception of the invention. O'Reilly v. Morse, 56 U.S. (15 How.) 62 (1853).

The subsequent participation of Richter and Huber in the development process, on the record established, can well be characterized as managerial

---

(Footnote continued from page 68)
far heavier burden to establish incorrect inventorship in an issued patent through clear and convincing evidence. The defense of incorrect inventorship, of nonjoinder or misjoinder of the true inventors in a U. S. patent, is considered to be a technical defense which must be established by clear and convincing evidence. Jamesbury Corp. v. U.S., 183 U.S.P.Q. 484 (Ct. Cl. 1974); Certain Steel Rod Treating Apparatus, 215 U.S.P.Q. 237, 255-256 (Comm. 1981).

120

and advisory in facilitating communication between different technical departments which did not have a cooperative structure (FF 254), and as such Richter and Huber are shown to be only managers and entrepeneurs rather than inventors. While it is recognized that section 116 of the patent statute establishes that inventors need neither physically work together nor make the same amount nor type of contribution, there is no evidence that Richter or Huber made any specific contribution to the conception or reduction to practice of the invention in the development of the "Viledon" pocket filter beyond an initiative and a general communication and cooperation. Specific identifiable contributions of some element(s) to the conception or reduction to practice of the subject matter of the claimed invention are generally required for inventorship. See, Morgan, supra; Garret Corp. v. U.S., 422 F.2d 874, 164 U.S.P.Q. 521, 526-527 (Ct. Cl. 1970); Amax Fly Ash Corp. v. U.S., 182 U.S.P.Q. 210, 215, aff'd and adopted, 514 F.2d 1041, 185 U.S.P.Q. 437 (Ct. Cl. 1975).

The administrative law judge does not, under the circumstances at issue, find factually persuasive of inventor nonjoinder the facts that Richter and Huber received small payments designated as "inventor compensation" or royalties, and that they were also designated on a contemporaneous signed Invention Notification form as 5% contributing inventors. The administrative law judge finds that the portion of the form dealing with individuals identified as comparatively small percentage contributors to the invention, the 5% contributors, was not filled out with an eye to actual inventorship for patent application purposes. (FF 245, 246, 251 to 254). The contents of the form itself support Moldenhauer's account that the naming of such individuals on the form was an exception to normal practice, and that this identification was not made to indicate that they were actual inventors of the gas filter element. (FF 245, 246, 251, 252). Thus, besides Richter and Huber, others not named as inventors were similarly listed on that form as "5% inventive participants", including a Burk and Dr. Hoffman, and the form itself subsequently clearly and specifically stated that Burk and Hoffman did not contribute inventively to the development of the '375 patent. (FF 246, 251). Similarly, the Invention Notification form states that the gas filter element development task came into being from directions from Richter and Huber's sales department regarding sales possibilities, and that this technical task was solved by the technical departments of the plastic works and "Viledon" factory and the form only describes the specific contributions of the individuals later named in the '375 patent in actually solving this technical problem. (FF 246). The Invention Notification form indicates that sales, through Richter and Huber, merely posed a technical problem for solution by others, rather than themselves making specific contributions to the solution. Id.

In addition, in the same place on the Invention Notification form where the individuals are listed as 5% participants, the form clearly and specifically states that as agreed only Schneider, Ringel, Rutsch and Kohl, the named inventors in the '375 patent, would be named on the patent application. (FF 246, 252). Richter and Huber contemporaneously indicated their agreement with this identification of inventors for patent purposes by reading and signing that form, which itself states the importance of accurate completion of the form. (FF 245, 252). Richter testified that he signed the form in part relying upon the advice of a superior (FF 243). However Richter did not testify as to any contemporaneous disagreement with or reluctance to follow that advice, or any pressure placed upon him to sign this form. While

Richter testified that he signed the invention notification form to avoid resentment and ill feelings on the part of the people in the technical divisions responsible for working out the details (FF 243), he did not explain why he could have expected any such resentment and ill feelings were he, as now is claimed, an actual co-inventor. Moreover his testimony indicated that he had been named an inventor on another patent for Freudenberg despite his position in sales at Freudenberg. (FF 244).

The administrative law judge finds persuasive Moldenhauer's testimony that the 5% contributors identified on the Invention Notification form were rewarded by Freudenberg with payments designated as inventor compensation in order to recognize their non-inventive contributions of time and effort in facilitating the development of an invention involving inventors in different departments of the company for which Freudenberg previously had no cooperative structure. (FF 254). As confirmed by the Invention Notification form signed by all of them, which as noted in the preceding paragraph indicates by its text that these contributors were not actual inventors, this essentially was a reward of coordination and entrepeneurship, rather than inventorship.

The Federal Circuit has analogously found insufficient another asserted proxy for actual proof of an individual's specific inventive contribution. In In re Katz, 687 F2d 450, 215 U.S.P.Q. 14 (Fed. Cir. 1982), the Court overturned the Board of Patent Appeals determination of inventor nonjoinder despite the fact that the sole patent applicant was a co-author with others, not named as inventors in the patent application, of an article reporting on the subject matter of the claimed invention. Accord, Ex parte Kusko, 215 U.S.P.Q. 972 (PTO Bd. Appls. 1981).

The respondents contend that the "basic idea" of Richter and Huber was original and even if it was merely the application of an old idea, nevertheless it constituted a contribution to the conception of the invention sufficient for joint inventorship. (R Post R at 29; RPCL 13). It is well established however that inventorship does not reside in suggesting an idea of a desireable result to be accomplished,[27] which is what Richter and Huber did when they originated their "initiative" that a pocket filter be developed with a certain already known frame which had not been previously used in pocket filters. The argument that the non-inventive or obvious nature of such an initial idea is irrelevant to joint inventorship conflicts with the applicable precedent of Garrett Corp, 422 F.2d at 879, 164 U.S.P.Q. at 527.

Since the "basic idea" was merely the "initiative" that a pocket filter be developed with a known synthetic frame, the precedent of Morgan, supra, precludes invention. Morgan similarly involved known elements which only in the desired combination was novel; as here, the actual development of the combination in Morgan was done by others. Richter and Huber did not conceive or reduce to practice any novel combination. They did not make real a novel combination, but only proposed the initiative that others do so.

Respondents' cited authority, Delaski & Thropp Circular Woven Tire Co. v. William R. Thropp & Sons Co., 218 F. 458 (D.C.N.J.), aff'd., 226 F. 941 (3rd Cir. 1914), does not stand for the proposition asserted by respondents. DeLaski involved an assertedly incorrect joinder of one named inventor DeLaski who contributed certain claimed elements, which were conceived by that inventor after the general conception of the rest of the invented novel machine by the remaining inventor Thropp. The element contributed by

---

27/ Garrett Corp., 422 F.2d at 879, 164 U.S.P.Q. at 526 ; Amax Fly Ash Corp., 182 U.S.P.Q. at 215.

124

DeLaski was essential to the proper operation of the invented machine and was an essential element in each claim. DeLaski principally stands for the requirement now mandated by statute in section 116 of title 35 that joint invention may involve contributions of different types or amounts, but it does not hold that the mere suggestion of a desired novel result, with the expectation that it combine old elements, constitutes invention. Accord, Certain Steel Rod Treating Apparatus, 215 U.S.P.Q. 237, 255-256 (1981) (defense of incorrect joinder rejected, despite testimony of one inventor that he was the sole correct inventor and that he had agreed to the naming of the other inventor only because of corporate pressure, based on joint inventor's contribution of one integral step in the claimed method). Unlike the situation in DeLaski, Richter and Huber did not make specific contributions to the means to solve the problem that they posed when they suggested their desired result of a pocket filter with a frame to media construction such as that used by another company.

Based on the foregoing, the administrative law judge finds that respondents have not sustained their burden in establishing that the '375 patent is invalid because complainant failed to join Messrs. Huber and Richter as co-inventors.

9. Enforceability of the '375 Patent

Respondents argue that the "Viledon" Company product brochure marked as RTX-006 was published more than one year prior to the actual filing date of the U.S. application for the '375 patent; that the RTX-006 brochure is at the very least a highly probative reference for 35 U.S.C. §103 purposes, if not a complete 102(b) bar; and that therefore, complainant's failure to bring its own prior product sales literature to the attention of the Patent Office constitutes inequitable conduct which renders the '375 patent unenforceable. It is also argued that Freudenberg's failure to identify Richter as a co-inventor on the '375 patent renders the '375 patent unenforceable. (R Post at 27 to 29).

As found earlier in this initial determination at 20 to 37, 42 and 60 to 74, respondents have established neither that RTX-006 is a publication under 35 U.S.C. §102(b) or prior art under 35 U.S.C. §103 nor that Richter should have been named as a co-inventor.

Based on the foregoing, respondents have not established that the '375 patent is unenforceable.

II. Infringement

According to complainant, the commercial designation of the filters of respondents which have been charged with infringement are PPL/EU4 and PFL/EU5. The PFL/EU5 is said to be the only accused model which has been sold in the United States but samples of the PPL/EU4 were said to have been imported for display purposes. (C Post at 3).[28/] Complainant argues that

---

[28/] The complaint, as supplemented (paragraph 16), and complainant's motion for summary determination on the economic issues accused respondents' pocket filter models PPS/EU3, PPL/EU4, PFS/EU4 and PFL/EU5 as infringing the '375 patent. In the initial determination on the economic issue (Order No. 13) the only sales found to be the subject of actual injury to the domestic industry were respondents' sales of the PFL/EU5 model. (Order No. 13 at 9-11). Additionally, as stated in the context of future injury the product "desired" in the United States is respondents' model PFL/EU5 (Order No. 13 at 13).

(Footnote continued to page 76)

it has established infringement of the '375 patent by having its Janke read claims 1-4 and 6-9 in issue and compare them with the "accused structure" and that Janke's reading of the claims against the "accused apparatus" went uncontested. (C Post at 3, 4).

The staff argues that respondents' filter models PPL/EU4 and PFL/EU5 infringe the claims of the '375 patent, because an "examination" of those filters indicate that they are essentially identical in construction and design to Freudenberg's filter CPX-5 (Model F-45) which respondents have stipulated is covered by the patent. (S Post at 26).[29/]

In their posthearing filings respondents do not discuss the issue of infringement.

On the issue of patent infringement, complainant bears the burden of proof by a preponderance of the evidence. Hughes Aircraft v. United States, 717 F.2d 1351, 1361, 219 U.S.P.Q. 473, 480 (Fed. Cir. 1983). Determination of the issue of infringement involves the determination of claim meaning and the application of the construed claims to the accused structures. Caterpillar Tractor Co. v. Berco, S.p.A., 714 F.2d 1110, 1114, 219 U.S.P.Q. 185, 187 (Fed. Cir. 1983); Autogiro Co. of America v. United States, 384 F.2d 391, 397, 155 U.S.P.Q. 697, 702 (Ct. Cl. 1967). With respect to claim meaning the administrative law judge, under the section 7 at 57 to 60 of this initial

---

(Footnote continued from page 75)
Respondents Borkent testified that the PFL/EU5 model is the better product, has a higher filtration efficiency, and the customer wants the product in the United States. (Borkent Dep. CPX-2 at 27-28). This testimony was attached to the motion for summary determination, Ex. 6.

[29/] The staff also relies in part on CPX-6 and CPX-7 which have been withdrawn.

127

determination, has rejected respondents' contention that the claims are indefinite in the use of the terms "at least one self-supporting wedge-shaped filter pocket", "stiffened" and "pyramidal".

As to application of the claims in issue to the accused PPL/EU4 and PFL/EU5, pursuant to claim 1 complainant's Janke found that respondents' gas filter model PFL/EU5 include a holding frame and a plurality of self-supporting wedge-shaped filter pockets with their open end secured to the frame; that each filter pocket is made of a pair of substantially symmetrical pocket halves formed of fusible fibers which are welded to one another along the wedge edge and centrally along the opposite wedge end faces; that the filter pockets contain a laminar spacing element welded to the opposite inclined wedge end faces which extends from adjacent the open end toward the wedge end; and that the filter pocket is self-supporting by the welding of the pocket halves together and the welding of the spacer to the pocket. (FF 211). According to claim 2 he found in PFL/EU5 a plurality (3) of spacers within each pocket. According to claim 3 Janke pointed out that the pocket filters in PFL/EU5 are made of fusible fibers, with the welding of pocket halves together and the welding of spacers within the pocket done by fusion of the fibers. Pursuant to claim 6, Janke pointed out that the spacers in PFL/EU5 are pyramidal in shape and welded to the opposite inclined wedge faces along opposite longitudinal edges of the pyramid. Each of the pockets of PFL/EU5 has additional stiffening fusion lines in the inclined wedge face extending adjacent from the opening end toward the wedge, as attested by Janke and required by claim 7. As claim 8 requires, Janke found that the plural pockets in PFL/EU5 are held in fixed relative position by the single holding frame which includes a molded plastic in which the open end perimeters of the pocket are embedded. (FF 212).

128

Janke found no difference in the rigidity and self-supporting character between complainant's self-supporting model F-45 and respondents' accused PFL/EU5. (FF 211). Respondents' pocket filters are promoted as self-supporting in the air stream by their promotional literature, and are there said to contain welded aerodynamic spacers, with front frames of polyurethane foam which is thermally bonded with and sealed leakfree to the pockets, which are made of synthetic nonwoven fiber. (FF 258). Respondents' specification to be used for its PFL/EU5 states that "each pocket shall be rigid enough to be self-supportive preventing it from sagging even when the airflow has been shut down." (FF 260). The administrative law judge finds that complainant has established that imported model PFL/ EU5 infringes claims 1 through 3 and 6 through 8 of the '375 patent.

With respect to claim 4 in issue, Janke testified:

> "In addition to the elements found in claim 1, claim 4 calls for the remaining wedge edges are stiffened by fusion.
>
> I find these elements in the physical exhibits which are Complainant's product and in the physical exhibit which is Respondents' product." [FF 212]

Claim 9 also recites "the remaining wedge edges ... being stiffened by fusion." (FF 11).

Infringement of claims 4 and 9 is not found in accused PFL/EU5 because visual inspection of PFL/EU5 (CPX-1) shows that "the remaining wedge edges" are not "stiffened by fusion". Claim 1 relates to the wedge edge which joins the wedge halves and which is found to be analogous to the forward cutting edge of a wedge. Claim 4 however refers to different remaining edges of a wedge. Instead of containing stiffening fusion lines at those remaining edges, the accused structure has a fusion line running centrally around the edges of the pocket halves referred to in claim 1 but no stiffening fusion line running from the corner of the mouths of the pocket to the tapered end of the pocket. Such "remaining wedge edges" are shown in the '375 patent drawing, in element 5 in FIGS. 1 and 2, and are referred to in the specification briefly at col. 3, line 11 as "additional stiffening ribs." (FF 21). As depicted in the drawings of the '375 patent (FF 19, 20) such "remaining wedge edges" must include the four edges defined by the joining of the flat inclined sides of the pocket with the top and bottom of the pocket.

The central fused welding line of claim 1 is not found to be a wedge edge. Rather the central fusion line lies between the opposite wedge end faces, with each opposing end faces containing an edge opposite the central fusion line. Seams apparent in early "Viledon" literature indicate that early Freudenberg pocket filters had such stiffening on the remaining wedge edges, with two such remaining edge lines flanking each central seam. (FF 261). This structure contrasts with respondents' current literature (FF 262) and respondents' accused model CPX-1 which show no stiffening on the remaining wedge edges.

Complainant and the staff also contend that respondents' model PPL/EU4 has been shown to infringe. Respondents do not address any contentions specifically to PPL/EU4. While the sole physical exhibit of a filter model of respondents in evidence is the model designated PFL/EU5 (CPX-1) and the testimony of complainant's Janke did not address PPL/EU4 (FF 211), respondents have stated that the PPL/EU4 and PFL/EU5 models both contain internal spacers or spanners which are heat sealed into position at the mouth of the air pocket. (FF 259). In addition there is an advertising leaflet in evidence which further supports the finding that the model PPL/EU4 infringes claims 1 to 3 and 6 to 8 in issue. (FF 263).

Based on the foregoing the administrative law judge finds that complainant has established that respondents' accused structures PPL/EU4 and PFL/EU5 infringe claims 1, 2, 3, 6, 7, and 8, but not claims 4 and 9, of the '375 patent.

III. Respondents' Claim of Inequity

Respondents argue that it would be inequitable to enforce complainant's '375 patent against respondents, because complainant has been formed by the "huge" German company Freudenberg that assigned its patent rights to complainant, and which German company is now attempting to use the U.S. trade laws to exclude competition from a Dutch concern. Respondents argue that this scheme is inequitable and constitutes a "pervasion [sic]" of the intent and purpose of section 337. (R Post at 29, 30).

Complainant, a Massachusetts limited partnership, has not denied that it was formed by Freudenberg. (FF 5). Complainant also is a corporate affiliate of Firma Carl Freudenberg which recently assigned the '375 patent to complainant. (FF 5, 11). Complainant is now attempting to exclude unfairly traded products which infringe that '375 patent. Respondents have not contested the fact that complainant constitutes a domestic industry under section 337 which is actually producing gas filter elements in its plant in the United States. Moreover respondents ignore the fact that the Commission has determined not to review an initial determination which granted complainant's motion for summary determination that the importation and sale of respondents' nonwoven gas filter elements have the effect and tendency to substantially injure an efficiently and economically operated domestic industry assuming there is proven an unfair act. Thus the Commission has already held that complainant, which is a domestic industry although foreign owned, can properly seek relief under section 337 for injury caused by allegedly infringing imports.

Respondents' argument of inequity and perversion of statutory intent effectively invites the Commission to discriminate against the complainant on the basis of national origin, i.e., on the basis that it is a foreign owned affiliate of a West German firm, and/or on the basis that the inventors of the '375 patent are of foreign origin. That invitation to discriminate is wholly misplaced.

A determination under section 337 is on the basis of the probative evidence submitted of record, and is not decided and may not legally be decided on the basis of the national origin of the parties. Section 337 and its administration by the Commission do not discriminate on the basis of national origin, as the Commission has unambiguously stated in In re Spring Assemblies, 216 U.S.P.Q. 225, 231:

> Section 337 does not discriminate against foreign corporations by virtue of their foreign status. It applies to foreign and domestic corporations alike. Section 337 gives the Commission jurisdiction over products imported from a foreign country, even if they are manufactured and/or imported by a U.S. corporation. The Commission's jurisdiction lies in unfair acts occurring in connection with the importation of goods into the United States or their sale, and it extends to all persons engaged in such unfair acts.

(Comm. 1981). The Federal Circuit has additionally stated that section 337 is non-discriminatory and not in violation of any treaty rights, and that the same rights are afforded in section 337 proceedings to domestic firms as to foreign firms. Akzo N.V. v. International Trade Commission, 808 F.2d 147/1 U.S.P.Q. 2d 1241, 1251 (Fed. Cir. 1986). Moreover the Commission has in the past enforced, under section 337, U.S. patent rights from inventions developed abroad and exploited domestically. E.g., In re Reclosable Plastic Bags, 192 U.S.P.Q. 6784 (Comm. 1977); Certain Reclosable Plastic Bags, Inv. No. 337-TA-266 (unreviewed ID 1988).

Based on the foregoing, the administrative law judge finds that it is not inequitable to enforce, under section 337, complainant's '375 patent against respondents.

FINDINGS OF FACT

I. Jurisdiction

1. The Commission has subject matter jurisdiction and in rem jurisdiction.

2. Service of the complaint and notice of the investigation was made on the respondents.

3. The respondents have actively participated in the investigation.

4. The Commission has in personam jurisdiction over the respondents.

II. Parties and Products In Issue

5. Complainant Freudenberg is a Massachusetts Limited Partnership having its principal place of business at 20 Industrial Avenue, Chelmsford, Massachusetts 01824. Freudenberg produces six models of nonwoven gas filters at its plant in Hopkinsville Kentucky; G-35, F-45, T-60, MF-85, MF-90 and MF-95. The numerical designation of Freudenberg's gas filters indicate their filtration efficiency, e.g. the G-35 has a 35% efficiency and the MF-95 has a 95% efficiency. Freudenberg is an affiliate of Firma Carl Freudenberg, a German entity that was the initial assignee of the '375 patent. (CX-1; CX-2, at 5; Janke CX-45 at 1; SX-1, response to Int. Nos. 1 and 23; complaint, para. 2; 2; SX-1 at 1, 2).

6. Respondent Filtrair, B.V. (Filtrair) is a Netherlands corporation located at deWerf 16, 8440 AP Heerenveen, the Netherlands. Respondent APB Corporation (APB) is a Delaware corporation and has a business address at One Commerce Center, Suite 300 located in Wilmington, Delaware 19899. The principals and sole owners of Filtrair and APB are Albert and Pieter Borkent. Filtrair manufactures and exports the accused nonwoven gas filters. Filtrair is also an affiliate of Borkent B.V., which is a producer of nonwoven filter material that it sells to Filtrair. APB imports the accused nonwoven gas filters into the United States and sells them in the United States through approximately 40 distributors. (CX-38 at 2, complaint, para. 12 and 13; answer para. 12 and 13; CX-36, response to Int. No. 1 and 12, Borkent Dep. CPX-2 at 5, 9, 14, 15, 29, 62).

7. The filters at issue are used for the separation of floating particles from an air stream. (CX-1, col. 1, lines 6 to 9).

8. "Viledon," a registered trademark owned by complainant's corporate affiliate, Firma Carl Freudenberg, is the trademark under which complainant markets, promotes and sells special nonwoven articles for use in the industry. The "Viledon" trademark is used by complainant in association with the patented gas filter elements in issue. (Janke CX-45 at 4).

9. Claims 1, 2, 3, 4, 6, 7, 8 and 9 at issue read upon complainant's F-45, T-60 and MF-85, 90, 95 gas filter elements sold under the "Viledon"

135

trademark. (CX-46 "Stipulation Regarding Coverage of the Claim of U.S. Patent No. 4,056,375").

10. The commercial designation of the filters of respondents charged with infringement are PPL/EU4 and PFL/EU5. The latter is the only accused model sold in the United States but samples of the PPL/EU4 have been imported for display purposes. (CX-38, Int. Response 5(a); Borkent Dep. CPX-2 at 64; Janke Tr. at 8).

III. The '375 Patent

11. On November 1, 1977 the '375 patent titled "Gas Filter Element" issued to Wolfgang Ringel, Peter Rutsch, Rolf Schneider and Edgar Kohl, all of Germany. The patent was assigned to Firma Carl Freudenberg of Germany which recently assigned it to complainant. It is based on an application Serial No. 720,327 filed on September 3, 1976 which in turn refers to a Germany priority application 2,541,331 filed September 17, 1975. (CX-1, CX-2).

12. Independent claim 1 and dependent claims 2, 3, 4, 6, 7, 8 and 9 at issue read:

> 1. A gas filter element comprising a holding frame and at least one self-supporting wedge-shaped filter pocket each having its wide end open and secured to said frame, each filter pocket comprising a pair of substantially symmetrical pocket halves formed of fusible fibers and welded to one another along the wedge edge and centrally along the opposite wedge end faces and at least one laminar spacing element disposed within the pocket and extending from adjacent the open end toward the wedge edge, the spacing element being welded to the opposite inclined wedge faces, the filter pocket being rendered self-supporting by the welding of the pocket halves to one another and the welding of the spacing element to the pocket.

2. A filter element according to claim 1, including a plurality of spacing elements within each pocket, and spaced from the open mouth and the wedge edge.

3. A filter element according to claim 1, wherein the filter pocket comprises fusible fibers, the pocket halves being welded to one another by fusion and the spacing element being welded to the pocket by fusion.

4. A filter element according to claim 1, wherein the remaining wedge edges are also stiffened by fusion.

6. A filter element according to claim 1, wherein the spacing elements are pyramidal in shape and welded to the opposite inclined wedge faces along opposite longitudinal edges of the pyramid.

7. A filter element according to claim 1, including a plurality of additional stiffening lines in each inclined wedge face extending from adjacent the open end toward the wedge edge.

8. A filter element according to claim 1, including a plurality of filter pockets held in fixed position relative to one another by the single holding frame comprising a molded plastic mass in which the open end perimeters of the pockets are embedded.

9. A filter element according to claim 2, including a plurality of spacing elements within each pocket and spaced from the open mouth and the wedge edge, each filter element comprising fusible fibers, the pocket halves being welded to one another by fusion and the spacing elements being welded to the pockets by fusion, the remaining wedge edges also being stiffened by fusion, and each filter pocket further including a plurality of additional stiffening lines in each inclined wedge face extending from adjacent the open end toward the wedge edge, said additional stiffening lines coinciding with the fusion lines of the spacing elements to the pockets.

(CX-1).

13. According to the '375 patent gas filters are used for the separation of floating particles from an air stream such as the air entering ventilating or air conditioning equipment or being recirculated thereby. For the purpose of separating dust from an air stream it is known to use filter

units containing as the filtering medium nonwoven mats of glass or textile fiber. It is disclosed that it is advantageous for such nonwoven mats to be used in stiff supporting lattice designs known as high surface area filter units, in which the edges of the pieces of mat inserted in a V-shaped configuration are clamped to the holder in a dust-tight manner by appropriately shaped grids. A filter of this kind is described in German Petty Pat. No. 6,908,374. Moreover such filters are represented by the commercial Hi-Cap filters. (Bergman CX-59 at 18). The '375 patent, as to those filters, states that due to the stiff mounting of the filter media, such high surface areas filter designs are said to have particularly good characteristics with regard to the degree of dust separation, dust holding capacity and dust adhesion. Their use, however, is uneconomical inasmuch as the mountings are very expensive and also the relatively great amount of time required for the replacement of the dust-filled pieces of matting with clean ones is said to constituent a disadvantage. Furthermore, in all such known filter elements considerable difficulty is said to be involved in making sure that the installed mat sections are joined together in a dust-free manner along the edges, for otherwise dust leaks are said to occur. (CX-1, col. 1, lines 7 to 31).

14. The '375 patent discloses that "[i]n recent times "filter elements have become known which have an externally similar configuration while dispensing with stiff supporting structures. For the manufacture of such a filter element from cut-to-shape pieces of glass fiber or textile fiber matting, it is disclosed that such pieces have heretofore been assembled by sewing, cementing or spot welding to form the actual filter pockets. Various numbers of these filter pockets are said to be joined removably or irremovably

to a front mounting frame with the element commonly used as a ready-assembled unit. It is said that such filter elements have not, been widely used; that the individual filter pockets balloon under operating conditions, resulting in irregular distribution of the flow on the active filter surfaces; that fluttering occurs, which to results not only in an unsatisfactory separation of dust particles but also the danger of damage to the filter pockets as well as the danger of contamination of the filtered air by the filter fibers; that the known outer stitching of the seams gathers the edges of the mats imperfectly, so that edge piping must be provided to protect them; and that in addition, especially in the case of fine and ultra-fine filter elements; the unavoidable holes created by the penetration of the needles have to be cemented sheet by expensive hand operations. (CX-1, col. 1, lines 35 to 56).

15. The '375 patent teaches that a variety of methods has been used to restrain the ballooning action and to prevent the filter pockets from touching one another when they balloon under operating conditions, thereby impairing their efficiency. It is said that none of those methods has been entirely satisfactory; that when the opposite sides of the filter pocket are joined directly to one another by tack stitching or continuous stitching, the areas where the sides are joined to one another are compressed together which is said to reduce the effective filter area, even though each pocket is prevented from ballooning against the adjacent pocket. It is also said that the flow of air into the pockets is reduced and the resistance of the element to the passage of air is increased. Respondents' Rivers testified that pocket filters referred to here in the '375 patent are described in Rivers U.S. Patent No. 2,853,154 is illustrated by physical exhibit CPX-10 and commercialized as the Dri-Pak. (CX-1, col. 1, lines 37 to 68, col. 2, lines 1, 2, Rivers Tr. at 403, 404, CPX-10; RTX-011).

16. The '375 patent discloses that where the method of joining together the opposite sides of the filter pocket leaves space between the opposite seams, better conditions are said to be achieved with regard to air flow, but with other disadvantages, viz. if the sides of the filter pocket are tied together spot-wise, any fluttering or vibrational movements between them will threaten to tear them away from each other at the points where they are attached. To prevent the tearing, it is said that gores have been sewn between the sides of the filter pocket, i.e., triangular pieces of fabric are sewn between the sides of the filter pocket from the mouth to the bottom of the pocket. It is said that the disadvantage of this method of stitching is the great amount of time required for the sewing operation and for the subsequent gluing or sealing shut of the preformations made by the needle. Also, at the apex or bottom end of the pocket, there is said to be a decided reduction of the active filter surface. (CX-1, col. 1, lines 37 to 68, col. 2, lines 3-20).

17. According to the '375 patent, the invention is addressed to the problem of developing a pocket filter element which will equal the solid, high-surface-area filter as regards degree of dust removal and dust holding capacity while avoiding the disadvantages discussed in the '375 patent. This problem is said to be solved by a gas filter element consisting of a holding frame 2 (see FIG. 2 infra of the '375 patent) and a plurality of wedge-shaped filter pockets permanently attached to that frame, characterized in that the pockets have "self-supporting properties in the air stream" due to a trimmed, welded or fused seam joining together the parts of each pocket, plus spacing members made of flat material and attached by fusion in line with the direction of air flow, and if desired, additional stiffening means affixed by

fusion, the upstream edges of the pockets being affixed continuously and permanently to the holding frame which is of streamlined cross section, the holding frame consisting of hard foam material which is joined to the filter material of the pocket by foaming in place. In a further development of the invention, the spacing members of the wedge-shaped filter pockets, which are attached to the pockets by welding or cementing, are said to be made of a flexible sheet material and have additional stiffening means at the seams. In still another development, the spacing members are said to be made of sheet material formed into a tube of "lozenge-shaped cross section, i.e. pyramidal or truncated pyramidal shapes" with these tubes tapering from the mouth to the end and open or closed at their apex, and not reaching all the way to the mouth of the pocket. In yet another development, the pockets are said to be provided with stiffening ribs additionally provided by welding. (CX-1, col. 2, lines 22 to 55).

18. According to the '375 patent, the filter pocket is wedge-shaped and comprises a pair of substantially symmetrical pocket halves secured to one another as by fusion along the line 3, each pocket half is formed of gas permeable filter material and, if the filter material has a preferential direction for placement in a gas stream, it is placed for the gas to flow from inside the pocket to the outside of the pocket. It is disclosed that for the achievement of further stiffening, and also to optimize conditions for the flow of air or gas into the interior of the pockets, a number of spacing members of lozenge-shaped cross section 4, made of nonwoven fabric, sheet material or woven fabric, varying in number according to the quality of the filter medium and its resistance to air flow, are cemented or welded in place at 7, with additional stiffening ribs 5 provided by lock welding of the filter

medium. The use of bag-like inserts of lozenge-shape cross section as spacing members is said to have proven to be especially advantageous for the stabilization of the filter pockets against fluttering in the air stream although single flat spacing inserts 6 can also be used as shown in FIG. 2. (CX-1, col. 2, lines 64-68, col. 3, lines 1-18). The specification here and in the previous finding clearly shows that the welding of the pocket half and spacer attachment seams are clearly discloses in the specification to be the means of stiffening the pocket to give it self-supporting properties in the air stream.

19. FIG. 1, duplicated in the opinion section, is a perspective view of filter pocket in accordance with the invention of the '375 patent. (CX-1, col. 2, lines 57-59).

20. FIG. 2, duplicated in the opinion section, is said to be a perspective view of a filter element in accordance with the invention of the '375 patent made up of two filter pockets as shown in FIG. 1, two slightly modified pockets and a holding frame for all four pockets. (CX-1, col. 2, lines 60-64).

21. In FIG. 2, the '375 patent teaches that a plurality of filter pockets are held together into a unit or element by a molded holding frame 2 which desirably is made of plastic foamed in place so as to embed the perimeters of the mouths of the pockets comprising the element. (CX-1, col. 3, lines 19 to 24). The '375 patent also teaches:

> For the achievement of further stiffening, and also to optimize conditions for the flow of air or gas into the interior of the pockets, a number of spacing members of lozenge-shaped cross section 4, made of nonwoven fabric, sheet material or woven fabric, varying in number according to the quality of the filter medium and its resistance to air flow, are cemented or welded in palce at 7, and additional stiffening ribs 5 are provided by local welding

> of the filter medium. The use of bag-like inserts of lozenge-shaped cross section as spacing members has proven to be especially advantageous for the stabilization of the filter pockets against fluttering in the air stream. However, single flat spacing inserts 6 can also be used in accordance with the invention, as shown in FIG. 2.

(CX-1, col. 3 lines 4 to 18).

22. The '375 patent teaches that the advantages achieved by the filter element of the invention consist especially in the fact that its use permits a quick replacement of the filter by untrained personnel, while providing assurance against dust leakage; and that the filter pockets have no tendency to flutter, and the performance of the filter element equals that of solid, high-surface-area filters as regards dust removal and accumulation. (CX-1, col. 3, lines 26 to 31).

23. As to the materials of the filter, the '375 patent discloses:

> The filter materials per se are known and desirably comprise non-woven fiber battings held together by bonding but not sufficiently stiff to be self-supporting. The fibers may comprise any normally employed, either continuous filaments or staple fibers and desirably, at least in part, they are fusible, i.e. can be caused to become adhesive by heat or application of a solvent, e.g. nylon, polyester, olefin, acrylic, acetate, and the like. If no fusible fibers are present then the requisite adhesion and stiffening can be effected by conventional adhesives, e.g. polyvinyl acetate latices, etc.

(CX-1, col. 3, lines 32 to 42).

24. Nonwovens are textile-type products which are formed by bonding fibers into structures using various heating or chemical bonding processes. Such nonwovens are to be contrasted with traditional textiles which require that fibers can be spun into yarns and then woven, braided or knitted into the finished product. Nonwovens find utility in a wide variety of applications,

including wearing apparel, home furnishings, and various industrial uses. (Janke CX-45 at 3).

IV. The '375 File Wrapper

25. Original claims 1, 2, 7 and 9 of the application that matured into the '375 patent read:

> 1. A gas filter element comprising a holding frame and a self-supporting wedge-shaped filter pocket having its wide end open and secured to said frame, the element comprising a pair of substantially symmetrical pocket halves secured to one another along the wedge edge and centrally along the opposite wedge end faces, and a laminar spacing element within the pocket extending from adjacent the open end toward the wedge edge, the spacing element being secured to the opposite inclined wedge faces, the filter pocket being rendered self-supporting by the securing of the sub-elements to one another and the securing of the spacing element to the pocket.
>
> 2. A filter element according to claim 1, including a plurality of filter pockets held in fixed position relative to one another by a single holding frame comprising a molded plastic mass in which the open perimeters of the pockets are embedded.
>
> 7. A filter element according to claim 1, wherein the spacing elements are pyramidal in shape being secured to the opposite inclined wedge faces along opposite longitudinal edges of the pyramid.
>
> 9. A filter element according to claim 2, including a plurality of spacing elements within each pocket and spaced from the open mouth and the wedge edge, each filter element comprising fusible fibers, the pocket halves being joined to one another by fusion and the spacing element being secured to the pocket by fusion, the remaining wedge edges also being stiffened by fusion, and each filter pocket further including a plurality of additional stiffening lines in each inclined wedge face extending from adjacent the open end toward the wedge edge, said additional stiffening lines coinciding with the joinders of the spacing elements to the pockets.

Original claims 3, 4, 5, and 8 substantially read as claims 2, 3, 4, and 7 respectively in issue. (RTX-016 at 409, 410).

26. In a Patent Office action of January 11, 1977, original claims 1 to 9 were rejected under 35 U.S.C. §103 as unpatentable over Nutting U.S. Pat. No. 3,386,231 (the '231 patent), French Patent No. 2,201,111 (the '111 patent) and Janson U.S. Pat. No. 3,422,602 (the '602 patent), the Examiner taking the position that it was obvious to apply the spacer of the '111 patent to the '231 patent and additionally obvious to mold the frame of the '602 patent to the '231 patent. A Bauder et al U.S. Pat. No. 3,190,059 was cited to show the state of the art. Original claims 1 to 9 were also rejected under 35 U.S.C. §112 on the ground that the claims fail to structurally relate and connect elements. (RTX-016 at 443, 444).

27. In a amendment filed March 31, 1977, original claims 1, 2, 7 and 9 were amended as follows (bracketed material is deleted and underlined material is added):

> Claim 1, A gas filter element comprising a holding frame and at least one [a] self-supporting wedge-shaped filter pocket each having its wide end open and secured to said frame, [the element] each filter pocket comprising a pair of substantially symmetrical pocket halves formed of fusible fibers and [secured] welded to one another along the wedge edge and centrally along the opposite wedge end faces [,] and [a] at least one laminar spacing element disposed within the pocket and extending from adjacent the open end toward the wedge edge, the spacing element being [secured] welded to the opposite inclined wedge faces, the filter pocket being rendered self-supporting by the [securing] welding of the [sub-elements] pocket halves to one another and the [securing] welding of the spacing element to the pocket.
>
> Claim 2, A filter element according to claim 1, including a plurality of filter pockets held in fixed position relative to one another by a single holding frame comprising a molded plastic mass in which the open end perimeters of the pockets are embedded.

> Claim 7, A filter element according to claim 1, wherein the spacing elements are pyramidal in shape [being secured] and welded to the opposite inclined wedge faces along opposite longidinal edge of the pyramid.
>
> Claim 9, A filter element according to claim 2, including a plurality of spacing elements within each pocket and spaced from the open mouth and the wedge edge, each filter element comprising fusible fibers, the pocket halves being [joined] welded to one another by fusion and the spacing [element] elements being [secured] welded to the [pocket] pockets by fusion, the remaining wedge edges also being stiffened by fusion, and each filter pocket further including a plurality of additional stiffening lines in each inclined wedge face extending from adjacent the open end toward the wedge edge, said additional stiffening lines coinciding with the [joinders] fusion lines of the spacing elements to the pockets.

(RTX-016 at 445, 446).

Amended claims 2, 7 and 9 read substantially as claims 8, 6 and 9 in issue.

28. Insofar as the Examiner's rejection under 35 U.S.C. §112, it was argued in the remarks accompanying the amendment filed March 31, 1977:

> Applicant, by the present amendment, has amended claims 1 and 2 to structurally relate and connect the elements as explained above and thus applicant respectfully submits that the claims comply with 35 USC 112 and that the rejection is thereby overcome. It is now clear that the gas filter comprises at least one filter pocket held in a holding frame at the opened end perimeter thereof. Each filter pocket comprises a pair of substantially symmetrical pocket halves which are welded together and have at least one laminar spacing element disposed therein. These structural inter-relationships and connections are therefore clearly defined in he claims as now amended. Applicant respectfully requests reconsideration of the rejection under 35 USC 112.

The claimed invention is described as follows:

> The present invention relates to a gas filter element comprising a holding frame 2 and at least one self-supporting wedge shaped filter pocket 1, each having its wide end open and secured to the frame. Each filter pocket comprises a pair of substantially symmetrical pockets halves. In order to render the filter pocket self-supporting, the pocket halves are welded to one another along the wedge edge and centrally along the opposite wedge end faces and at least one laminar spacing

> element is disposed within the pocket and extends from adjacent the open end toward the wedge edge. The spacing element is welded to the opposite inclined wedge faces. ...

(RTX-016 at 446, 447).

29. Referring to the Examiner's citation of the '231, '111 and '602 patents, it was argued:

> The Nutting reference teaches the bonding together of two sheets 13, however, the sheets 13 which are each provided with furrows 14 and crests 16 which abut with the crests of the other sheet to provide a plurality of longitudinally extending side-by-side filter pockets 17. Since each of the tubular pockets 17 are supported at crests 16 around the perimeter thereof, it would be redundant to provide the spacers of the French reference therein. Additionally, the French reference does not teach the welding of the spacing elements into the filter pockets and neither Nutting nor the French reference could be modified to do so because of the redundancy of providing spacing elements within the Nutting pocket filter.
>
> The Janson reference which has been cited to show a molded frame, also does not teach or suggest the welding of the spacing elements into the filter pockets to render same self-supporting. In fact, Janson teaches the stitching together of the filter structures rather than the welding or fusing recited in the presented claims. [The '602 Janson patent discloses a gas filter structure with a plurality of pockets (of preferably fiber glass) whose ends are "permanently embedded" by molding in an apertured plastic front panel which in turn is secured to a rigid metal frame. The Janson patent teaches that its construction provides a secure and air-tight mounting for the filter element. Instead of disagreeing with the obviousness of molding a frame to the filter, it was merely argued here that Janson does not teach or suggest the welding of the spacing elements into the filter pockets to render the pocket self-supporting. This was an admission of the lack of novelty inherent solely in a molded frame molded to the filter media].
>
> The Bauder reference also teaches a filter structure which is stitched together as opposed to being welded or fused. The inherent disadvantage of a machine sewn seam as opposed to the welding or fusing of the present invention, is that a machine sewn seam does not possess any form stability by itself.

> Under working conditions, some part of the originally wedge shaped pockets as shown in Bauder, inflate as a result of a displacement of the machine sewn threads whereas the width in other sectors become smaller. The points where the sewn threads 40 pass the filter mat cannot be well sealed.
>
> As this kind of filter is mostly used for fine filtering operations, it results in undesired points where dust can pass which can increase in a relatively short time especially as a result of the stress at particular points of the filter medium on the thread due to the fluttering movements of the filter medium. Since pocket filters of this kind are used in filtering the finest particles, such defects can not be tolerated.
>
> Another disadvantage of the filter pocket, such as the one shown in Bauder, is the fact that they are held together in the sector of the upper and lower seam 36/38, only by means of a machine sewn seam. Such a seam is not able to provide self-supporting properties in the case where there is a vertical mounting of the pocket filter.
>
> Therefore, the filter pocket according to the present invention is provided with a welded seam, or fused seam as recited in claims 4 and 5, not only in the sector of the upper or lower end ridge but also additionally in the sector of the ridge on the right side. This welded seam forms an integrated static stiffening element of the filter pocket rendering it self-supporting.

The last two paragraphs in particular show that it was intended that the '375 patent is directed to a structure with more internally stable and stiffened pockets in resisting displacement from a V shape than that of the structure of the '059 patent. (RTX-016 at 448 to 450; CPX-4 (Janson '602 patent at cols. 1-2)).

30. In a Patent Office action dated May 18, 1977, the Examiner stated that the application was in condition for allowance. It was also stated:

> In claim 1, line 5 --formed of fusible fibers and--has been inserted after "halves".

> The above change was authorized by Mr. Horn applicant's representing attorney on May 13, 1977 in a telephone conversation.

Amended claim 1, as changed on May 18, 1977, reads on independent claim 1 in issue. (RTX-016 at 452).

31. On August 29, 1977, a supplemental declaration was signed and submitted by inventors Ringel, Rutsch, Schneider and Kohl. (RTX-016 at 453).

32. A Notice of allowance issued on May 25, 1977. (RTX-016 at 454).

V. Reexamination of the '375 Patent

33. On June 19, 1986, a request for reexamination of claims 1 and 2 in issue was filed under 37 CFR §510(d). In the request it was stated in pertinent part:

> The patent for which re-examination has been requested claims priority under 35 USC § 119 based on German Patent Application No. 2,541,331 filed on September 17, 1975. Three oppositions against the German application were lodged in the German Patent Office. A total of 32 patents and other publications were used by the three opposers in support of their oppositions. One of these publications was a German patent which could not have been available to support a rejection under 35 USC §§ 102 or 103. Six of the publications constituted advertisements, price lists or product bulletins which either do not bear any publication dates and/or are completely irrelevant to the subject matter of the patent for which re-examination is sought. This request for re-examination is based on the other 25 patents and publications.
>
> The German Patent Office held that the subject German patent application No. 2,541,331 was not patentable over one of the cited references either taken alone or in combination with two other references. Having found all of the subject claims unpatentable over these references, the German Patent Office did not make any ruling with respect to any of the other references.

> The instant re-examination request is being filed in order to make officially of record the pertinent and available art which was cited in the German Patent Office proceedings and thereby to obtain a ruling on whether any of the art presents a substantial new question of patentability.

(RTX-017 at 671, 672).

34. The request for reexamination stated that the German Patent Office based its holding of unpatentability primarily on German Offenlegungsschrift No. 1,407,932 (the '932 patent) and that also referred to in the German Patent Office opinion, but of clearly lesser importance, were U.S. Patent No. 3,138,285 and French Patent No. 1,509,054. It was also argued that the substance of the '932 patent had already been considered by the U.S. Patent Office in the prosecution of the '375 patent through the citation of U.S. Pat. No. 3,190,059 (the '059 patent) in the prosecution. The '059 patent was said to be the American equivalent of the '932 patent and hence that it was

> "not possible that the German Offenlegungsschrift by itself could present a substantial new question of patentability. However, the German Offenlegungsschrift is being brought to the Examiner's attention in order for Patent Owners to fully discharge their duty of candor under 37 CFX § 1.56 and also because the decision in the German opposition was based in part upon this German Offenlegungsschrift taken with two other references not cited in the U.S. Patent and Trademark Office proceedings."

(RTX-017 at 674 to 676).

35. As for any differences between the German '932 patent and the '059 patent, it was alleged in the request for reexamination:

> Bauder U.S. Patent No. 3,190,059 was cited during the prosecution of the application which matured into U.S. Patent No. 4,056,375. However, it was not used as the basis for any objection or rejection, but rather was cited only to show the state of the art. There are certain differences between the disclosure of the German Offenlegungsschrift No. 1,407,932 and the corresponding U.S. Patent No. 3,190,059, but such differences are non-substantial. A comparison of the respective

> disclosures in the English translation of German Offenlegungsschrift No. 1,407,932 - reference (1-b) - and the U.S. Patent reveals the following differences. First, the background information contained in Column 1, lines 8-65, of the U.S. patent is somewhat shortened in the German Offenlegungsschrift. Secondly there is no Figure 9 in the German Offenlegungsschrift, but in this connection, it should also be noted that there is no actual discussion of Figure 9 in the U.S. patent. And thirdly, the English measurements in the U.S. patent have, as would be expected, been converted to their metric equivalents in the German Offenlegungsschrift.

(RTX-017 at 675).

36. In the request for reexamination it was argued that:

> One of the features in the claims of . . . German patent application [of the Patent Owners who seek reexamination] is that the holding frame for the gas filter comprises a rigid foam which is foamed directly onto the filter pockets. U.S. Patent No. 3,183,285 and French Patent No. 1,509,054 were used to shown the alleged lack of inventiveness in this foaming feature. Similar methods are disclosed in U.S. Patent No. 3,183,285 at column 1, line 36-62, and in French Patent No. 1,509,054 beginning with the third full paragraph on page 1 and extending through paragraph "c" on page 2. However, this in situ foaming process and the resulting embedment of the filter elements in the frames are not part of the claims for which Patent Owners seek re-examination. Indeed, the embedment feature is recited in U.S. Patent No. 4,056,375 only in claim 8 and is not one of the points of novelty asserted by patentees. Thus, Boylan U.S. Patent No. 3,183,285 and French Patent No. 1,509,054 are of no direct relevance tot he question of whether the art used by the German Patent Office would, in a U.S. re-examination proceeding, present a "substantial new question of patentability".

(RTX-017 at 676, 677).

37. It was further argued in the reexamination request that of the remaining available references cited to the German Patent Office in the opposition proceedings, only French Patent No. 1,296,701 (the '701 patent) published on May 14, 1962 is considered to present a possible basis for reexamination. The '701 patent was said to be concerned with high capacity

air and gas filters which are composed of a number of filter layers. The filter layers are said to be arranged so that two successive layers form a triangular-shaped space. It was argued that whatever relevance this patent has to the '375 patent arises from the modifications shown in figure 6, that in this figure, according to the paragraph bridging pages 3 and 4 of the translation, there are shown inserts which can be placed into triangular-shaped areas; that these inserts "look somewhat like" the spacing elements recited in claims 1 and 2 of the '375 patent; that there are a number of significant differences between the disclosure of the '701 patent and the claims for which re-examination is sought; that to begin with, the inserts in the French patent are arranged so that they taper from the outlet side of the filter unit toward the inlet side of the unit; that this is readily apparent from figure 3 of the drawings and the general discussion in the first full paragraph on page 3 of the translation; that thus reference numeral 6a, which designates the closure strip of the wedge held open by the inserts shown in figure 6 of the drawings, is at the inlet side of the filter assembly; that this is clearly shown in Figure 3 when the elements 6a, 6c, etc. are at the inlet and are held together by post 8a, while elements 6b, 6d, 6f, etc. are at the outlet end; that in other words, the spacing elements in the French patent are on the "backside" of the filter pockets; that this contrasts to the requirement in claim 1 of U.S. Patent No. 4,056,375 that the laminar spacing element be disposed within the pocket; and that another significant difference is that the filter pockets are closed at their edges by narrow bands of folded metal or plastic materials, rather than being welded as required in the claims U.S. Patent No. 4,056,375. (RTX-017 at 677 to 679).

38. In the request for reexamination it was stated that the three opposers also cited additional patents and publications which would have been "available art" under 35 U.S.C. §§ 102 and 103. Such art was identified and included "Product Bulletin HI-CAP 90/35 and HI-CAP 80/25 of Camfil GmbH (1978)." Commenting on that bulletin, it was stated:

> The product information brochure for HI-CAP 90/35 and HI-CAP 80/25 depicts an assembly of wedge-shaped air filters fastened within a frame. There is no mention of how the individual sides of the filter pockets are fastened together and there is no indication of any spacing elements within the pockets.

(RTX-017 at 679 to 686). It is not clear from this description whether the Examiner was aware that any of the sides of the filter pocket were welded. Looking at Continential brochure CX-78, respondents' Rivers was not able to tell whether the filters therein depicted were welded or stitched. (Rivers Tr. at 472, 473).

39. On July 23, 1986, the Patent Office granted the request for reexamination and thereupon stated:

> A substantial question of patentability affecting claims 1 and 2 of U.S. Patent 4,056,375 to Ringle et al is raised by the request.
>
> The request indicated that there is a question concerning the patentability of claims 1 and 2.
>
> Upon consideration of Bauder et al [U.S. Pat. No. 3,190,059] when taken with Nutting [U.S. Pat. No. 3,386,231] and the French patent 1,296,701 the examiner believes that a question as to the patentability of claims 1 and 2 is raised. The French patent is clearly material to the claimed subject matter. Therefore all the claims will be reexamined.

(RTX-017 at 693, 694, 695).

40. In a communication filed September 24, 1986 it was argued in pertinent part:

> There are two principal differences between the '375 claims and the disclosure of the Bauder reference. These are (1) the welding of the wedge edges together and (2) the welding of spacing elements within the pocket halves; the use of welding, rather than other methods of attachment such as stitching or binding, is important in providing the gas filters according to the '375 patent with their improved qualities.
>
> According to claim 1 of the '375 patent, each filter pocket comprises "a pair of symmetrical pocket halves . . . welded to one another along the wedge edge and centrally along the opposite wedge edge faces". Thus, welding is required on three sides: bottom, top and rear as shown in Figure 2 of the subject patent. In the Bauder reference, the pocket is formed of a single rectangular sheet, the rear end 30 being filed over and the top and bottom edges 36 and 38 being "stitched together or otherwise secured" - column 2, lines 32-38. Although the term "otherwise secured" - is used at this point, there is no definition of the term or any illustration of any means of securing the two sheets together other than by stitching. Therefore, the reference as a whole must be interpreted as disclosing only stitching as a means for securing the pocket-forming sheets. Indeed, there is further reference - column 3, line 39 - to "upper and lower stitch edges 36 and 38".
>
> The process of stitching and the process of welding can both be regarded as methods of fastening two objects together. However, when dealing with non-rigid materials such as the non-woven mats of glass or textile fibers which are commonly used as air filter media, a stitching process and a welding process lead to quite different results which affect the operation of the filter element. In the '375 patent, the patentees have provided an improved air filter element which processes [sic] rigidity at certain points and does not have a tendency to flutter - column 3, line 28. These advantageous properties are the result of the fact that the symmetrical pocket halves are welded together rather than being joined by other means such as stitching. The welding of the filter material provides a stiffened zone 3 shown in Figure 1 of the '375 patent. This stiffened zone which extends along to the top, rear and bottom portions of each filter pocket serves two important functions. First, as already noted, it materially decreases the tendency of each filter pocket to flutter and thereby increases the efficiency of the

filter unit. Secondly, the increased rigidity of each filter pocket means that, when air is not passing through the filter unit, each filter pocket will maintain its general shape and not fall down, bag-like upon each other. In contrast, a stitched-together series of filter pockets, such as that shown in the *Bauder* reference, would not have any rigidified portions and would therefore not exhibit the advantages of the '375 gas filter element.

Claim 1 of the '375 patent also requires "at least one laminar spacing element disposed within the pocket and extending adjacent from the opened end toward the wedge edge, the spacing element being *welded* to the opposite inclined wedge faces" (emphasis added). This second differentiating feature is also instrumental in providing the '375 filter element with its advantageous properties. The welds provide additional stiffened areas which hold the pocket open and prevent fluttering and falling. In contrast to these welded inserts, the *Bauder* reference discloses only a "series of filamentary stays" - column 3., line 37 - which are stitched - column 3., line 43 - into the walls of the filter pocket. The stitching of filamentary material through the pockets (described as "stays' at column 3, lines 43-51) can obviously not serve the purpose of stiffening. In the sentence bridging columns 4 and 5 of the Bauder reference, there is a statement that "instead of rows of stays, webbing, thin flexible sheet material, perforated or otherwise, in the form of long tapered fingers can be employed, the side edges being sewn or otherwise secured to the opposite flanks to provide the graduated covering spacing". Here again, it is readily apparent that the substitute materials, such as webbing or thin flexible sheet material, would not provide rigidity. Also, the reference again uses the term "otherwise secured" but, as in the situation discussed above, there is not definition of the term and no specific examples, other than sewing, of any means to obtain such "securing".

One of the disadvantages resulting from stitching or sewing is the resultant small holes in the filter medium. This is recognized in the *Bauder* patent where there is the statement -column 4, line 12 - that a layer of adhesive sealant should be applied in order to seal such holes.

It is therefore readily apparent that *Bauder* U.S. Patent 3,190,059 could not have served as an indication of obviousness for the '375 claims. Patent owner submits that the combination of the *Bauder* reference with *Nutting* U.S. 3,386,231 and French Patent No. 1,296,701 is similarly ineffectual.

> The Nutting patent was the primary reference employed by the Examiner during the examination of the '375 application and was subsequently withdrawn. It is submitted that this patent has little relevance to the '375 claims. It does not disclose wedge-shaped filter pockets. Furthermore, there are no welded edges and there are no internal spacing elements. The pocket filter according to the Nutting reference consists of forms which are stiffened throughout their entire surface; the forms are produced individually and subsequently connected. The relevance of this reference is not seen and it is believed that it cannot function in any manner as support for a rejection under 35 U.S.C. §103.
>
> * * *
>
> It should also be pointed out that, in contrast to the gas filters of the '375 patent and the Bauder reference, which are designed primarily for the filtration of ambient air, the filter of the French '701 patent is a high-temperature filter designed for use at temperatures higher than 150°C - page 1, second paragraph, of the translation. Furthermore, unlike the non-rigid filter media of the '375 patent and the Bauder reference, the French '701 filter is composed of non-flexible fibers such as mineral or glass fibers - page 1, second paragraph, of the translation. Planar filter screens are formed, which are placed one on another in wedge-shaped orientation and clipped together at their ends by narrow plastic or metal strips - page 3, top paragraph, of the translation. Furthermore, the arrangement of the various filter sheets is such that the gas streams through from the outside to the inside. In contrast thereto, the gas filter element of the '375 patent is designed for the gas to pass first into the inside of the individual pockets and then through to the outside. Thus, the spacers 9, 10 and 11 shown in Figures 5, 6 and 7 of the French '701 patent would not meet the requirement of the '375 patent of a "laminar spacing element disposed within the pocket". The filter element of the French '701 patent is designed for a purpose quite different from that of the '375 patent or the other references. They do not contain flexible filter mats and there can be no problem of lack of rigidity or fluttering. The French '701 patent does not disclose any possibility of welding the mats together; indeed, under the circumstances welding would not be appropriate.

(RTX-017 at 696 to 701).

41. In a notice of an intent to issue a reexamination certificate, dated October 20, 1986, the Patent Office stated that examination has been terminated and a Certificate will be issued in view of the communication filed on September 24, 1986. It was then stated:

> Comments on Statement of Reasons for Confirmation. Claims 1 & 2 avoid prior art and are patentable thereover as they define a laminar element in each of the filter pockets which is welded between faces of pocket. The pockets are formed of fusible fibers and the laminar element extends from adjacent the open end towards the wedge edge of the pockets. Claims 3-9 are confirmed as they depend from confirmed patentable claims 1 & 2. Bauder et al 3,190,059 stitches filamentary stays between the faces of the pocket and does not teach welding a laminar element extending between faces from open end towards wedge edge of the pockets. Nutting 3,386,231 does not teach laminar element between faces of each pocket. The French patent 1,296,701 does not teach filter pockets and the welding of the laminar element.

(RTX-017 at 704).

42. The same Primary Examiner was involved in the initial prosecution of the '375 patent and in the reexamination proceeding. (RTX-016, RTX-017).

43. A Rivers U.S. Pat. No. 2,853, 154 was cited by the patent owners and listed by the Examiner during the reexamination proceeding. (RTX-017 at 688, 705).

44. On January 20, 1987 a reexamination certificate issued on the '375 patent (CX-3).

VI. RTX-018 and RTX-006

45. Dr. Pieter K. Borkent is marketing and financial director of respondent Filtrair b.v. and president of respondent APB Company, the respondent in the investigation. (Borkent RTX-004 at 1).

46. Borkent and his brother A. Borkent form a "dual head" of respondent Filtrair b.v. Prior to joining Filtrair b.v. in 1982 or 1983 Borkent was a shareholder and active in the running of the business and determining its strategy from its inception, as an incorporated unit, on January 5, 1976. (Borkent CPX-2 at 5, 6).

47. Borkent has been involved with the filter business from the moment he was born and raised in the house "next to the factory". He is now 47. Brokent grew up with the filter business along with his brother A. Borkent. Borkent's grandfather started that business. The work "Filtrair" had been a brand name and the product with the brand name had been sold by Borkent's grandfather's company "Borkent b.v." Borkent was active in Borkent b.v."in strategizing. (Borkent CPX-2 at 5, 6).

48. Borkent b.v. was established in 1972 but then it was simply reincorporated because of a change in corporation law. Borkent b.v. still exists and producers the nonwoven material which is sold to Filtrair b.v. (Borkent CPX-2 at 15).

49. Borkent and his brother A. Borkent own almost equal shares of Borkent b.v. They own equal shares of respondent Filtrair b.v. A Borkent owns more shares of Borkent b.v. than Borkent. (Borkent CPX-2 at 138).

50. Borkent b.v. today has about 60 employees. Respondent Filtrair b.v. has about 5 employees. (Borkent CPX-2 at 18).

51. Respondent APB Corporation was founded in February 1984 to organize the sale of filtration products of respondent Filtrair b.v. and distribute them in the United States. (Borkent CPX-2 at 9).

52. In the period March through May 1975, Borkent testified that he attended several large international trade shows in Europe involving air filter technology, including a trade show in Frankfurt, Germany known as the "Internationale Fachmesse Sanitar Heizung Klima "(Frankfurt Fair) held on March 19 to 23, 1975, an exhibition for Filter Installations held at Goteborg, Sweden (Goteborg Fair) on May 9 to 14, 1975 and an exhibition V.V.S. held in the city of Stavanger, Norway (Stavanger Fair) on May 24, 25, 1975. (Borkent RTX-004 at 2).

53. Joachim Richter of Kastanweig, West Germany, is employed by the company Joachim Richter Gmbh with headquarters at Kastanienweg 8, D-4040 Neuss 21, Federal Republic of Germany. In December 1958, he accepted an offer from the company Carl Freudenberg of Weinheim and went into sales for the then newly-founded "Viledon" filter division where he was employed until June 30, 1982. In January 1983 Richter and his wife founded Joachim Richter Gmbh where he currently is the active partner and which company is involved in consulting on air filters and also markets air filters. (Richter RTX-005 at 1, 2).

54. Richter has consulting arrangements concerning filter technology with respondent Filtrair, B.V. and he derives compensation from Filtrair whenever he does consulting work for the company. (Richter Tr. at 167).

55. Richter when asked whether he has received substantial amounts from Filtrair, answered "I don't think so." However he also testified that he has a consulting agreement with Filtrair, B.V. The consulting agreement (CX-58) is currently in effect. It has been in effect since January 1983 when the agreement was signed. According to the agreement, Filtrair, B.V. pays Richter[ ] and Richter testified that he has been active as a consultant under the agreement[ ] Based on an exchange rate of 1.7 marks for one dollar, under the agreement Richter has

received more than [ ] to date for his consulting services. Richter's company also distributes products of Filtrair. B.V. and so there are not only consulting services rendered but also distribution of products to the end consumer in Germany. Richter derives additional income through those activities involving the sale of Filtrair products although Richter's "personal income" is not much greater. (CX-58, Richter Tr. 167, 171 to 174).

56. RTX-018 according to Richter was "published" by Firma Carl Freudenberg prior to March 18, 1975. It reads:

March 1975 Iss

VILEDON

VILEDON-COMPACT
FILTER BAG UNIT

TYPE		"COURSE" COMPACT	"FINE" COMPACT
Technical Data on Filter per ASHRAE 52-68:			
Separation Level (grav.)	%	87	95
Effectiveness (Desk Spot Test)	%	--	40-45
Front Frame - Size	mm	610x610	610x610
Aggregate length	mm	510	510
Number of filter bags		4	8
Front Surface: Filter Surface Ratio		1:6.5	1:12
Active Filter Surface	m^2	2.4	4.4
Nominal Air Volume	m^3/h	3400	3400
Front Blower Stream Speed	m/s	2.5	2.5
Media Speed	m/s	0.4	0.2
Initial Pressure Differential	Pa	20	40
Recommended Final Pressure Differential	Pe	200	250

VILEDON

160

As seen by the above, RTX-018 provides only technical specifications on two types of Viledon pocket filters, the Compact "Grob" and the Compact "Fein." (Richter RTX 005a at 1, 2, RTX-018).

57. From March 19, 1975 Richter began efforts to promote and market the Viledon Compact filters. He testified that in connection with those activities, he attended a meeting on March 14, 1975 prior to which the "printing of RTX-018" was agreed to. Richter testified that "[w]e chose to first print a simple product specification sheet which became the RTX-018 sheet because we were trying to have something prepared for a meeting to be held on March 18 and subsequently for the Internationale Fachmesse ISH held in Frankfurt which opened on March 19, 1975 where preferred customers were presented" with a copy of RTX-018. Richter further testified that after the Frankfurt fair he continued to use the RTX-018 sheet in his sales efforts directed to the Viledon Compact filters and that on April 25, 1975 he and two of his assistants visited the Ford Motor Assembly plant at Cologne and used the RTX-018 sheet to advertise filters. (Richter RTX-005a at 2).

58. Richter attended the Frankfurt Fair. He helped staff the booth of the Filters Division of the Firma Carl Freudenberg. (Gsell Tr. at 651).

59. Respondents' Richter testified:

> In March 1975, the VILEDON Compact "COARSE" and "FINE" 1/1 pocket filter units were presented to the foreign distributors of the VILEDON filter division at the international "ISH" trade fair in Frankfurt/Main. On this occasion, the pocket filters were not officially displayed in the fair booth, but rather shown "behind closed doors," so to speak. These two types of pocket filters are also displayed in leaflet A 475.2 [RTX-006]. However, the leaflet was not printed until somewhat later, as far as I remember in April/May 1975. The pocket filters were also to be exhibited at the VVS exhibition stand of the VILEDON filter representative in Goteborg, Sweden, which took place around mid-1975. However, since I myself attended only the ISH fair in Frankfurt/Main, I cannot say with certainty whether the pocket filters were exhibited at the VVS fair. After the ISH fair in March 1975, the pocket filters began

> to be marketed, whereby only the foreign distributors of the VILEDON filter division and a small group of domestic clients could be accounted for or responded to due to initial production capacity.

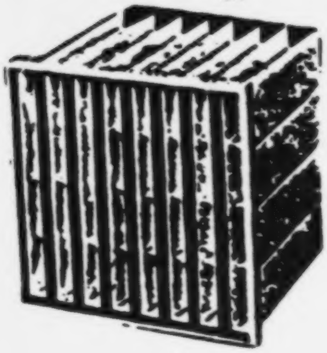
(Richter RTX-005 at 12).

60. RTX-006 is a two page document in German. It is identified in Borkent's direct testimony (RTX-004 at 2) as Borkent Exhibit 1, in Gsell's direct testimony (CX-62 at 3) as Gsell Exhibit 4 and CX-18, and in Richter's direct testimony (RTX-005 at 4) as "leaflet A 475.2." The first page of agreed upon tranlation of the RTX-006 is as follows:

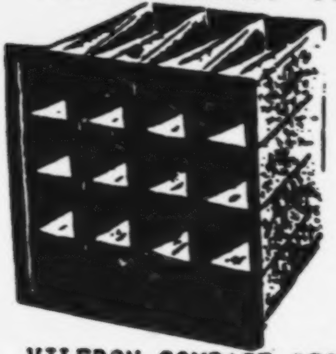
viledon

VILEDON COMPACT FILTER BAG UNIT

®



VILEDON COMPACT "FINE"



VILEDON COMPACT "COARSE"

-- Homogenous unit of frame and filter bag

-- Inherently stable and dustproof welded filter bags

-- New spreaders ensure optimal filter effect

-- Universal seal upon request

CARL FREUDENBERG

VILEDON FILTER MEDIA
D-6940 WEINHEIM, P.O. BOX 1830

VILEDON
Registered
Trademark

A 475.2

BEST COPY AVAILABLE

The agreed upon translation of the second page of RTX-006 reads:

VILEDON COMPACT

FILTER BAG UNIT

Technical Data

Type		COMPACT "COARSE"	COMPACT "FINE"
Filter medium		synth. fibers	synth. fibers
Technical data[1] per ASHRAE 52-68			
Separation level (grav.)	%	87	95
Effectiveness (atmosph.)	%	--	40-45
Front frame suitable for receptor frame	mm	610x610	610x610
Aggregate length	mm	510	510
Number of filter bags		4	8
Front surface:filter surface ratio		1:6.5	1:12
Active filter surface	m^2	2.4	4.4
Nominal air volume	m^3/h	3400	3400
Front blower stream speed	m/s	2.5	2.5
Media speed	m/s	0.4	0.2
Initial pressure differential	Pa[2]	20	40
Recommended final pressure differential	Pa[2]	200	250
Weight/unit	kg	1.5	2.5

[1] See separate information sheet for earlier SFI quality classes

[2] 10 Pa (Pascal) = approx. 1 mm WS

The second page of RTX-006 is substantially identical to RTX-018 except for the following differences; the second page does not have in the upper right hand corner "March 1975 Issue" nor in the upper left hand corner "Attachment 1"; RTX-018 omits any reference to "Weight/unit" data, lacks the footnotes 1 and 2 as well as the term "Technical Data" and for the subheading "Front frame suitable for receptor frame" on RTX-006 has the subheading "Front Frame - Size". (RTX-018; RTX-006).

61. Respondents' Borkent testified on direct that he received RTX-006 at, at least one of the Frankfurt, the Goteborg and the Stavanger Fairs and that RTX-006 was made available to attendees of the Fair by Freudenberg; that Borkent has retained the original of RTX-006 in his files since at least May of 1975 and he presently has transmitted the original of RTX-006 to his attorneys for use in this investigation; that the lower left hand portion of RTX-006 is a perspective view of a Freudenberg filter element entitled a "Viledon Company GROB" filter; and that upon "information and belief", the code designation A 475.2 at the lower right portion of RTX-006 (first page) is a Freudenberg designation for a printing date of April 1975; and that in any event, at least as early as May 1975, as a member of the industry public attending the Frankfurt, Goteborg and Stavanger Fairs, Borkent was given the RTX-006 at at least one of the Fairs. Borkent also testified that in addition to receiving RTX-006, "Freudenberg displayed a physical example of the Viledon Company 'GROB' air filter at the Fairs." (Borkent RTX-004 at 3, 4).

62. With respect to when he received RTX-006, Borkent testified:

> Q That was not my question, Mr. Borkent. My question is do you believe that you saw this leaflet at the Frankfurt fair in March of 1975?

164

A Looking at the brochure, it was my recollection that I received that at either of three fairs. Later evidence of when the fair exactly was held which is usually held in a period early in the year made me realize that it probably was not the ISH fair, but probably one of the two after the ISH fair, but it was in the same time frame.

* * *

Q Until you found out, Mr. Borkent, when the fair was, you believed that you got the leaflet at that [Frankfurt] fair, right?

A I believed that I received that leaflet [RTX-006] at one of those fairs. And since they were held closely together, I could not distinguish between the fairs which one it was.

Q The fact of the matter is, Mr. Borkent, that the leaflet, RTX-6, was not in existence at the time of the ISH Frankfurt fair in March 1975, is that not correct?

A It was in existence very close to the ISH fair and twelve and a half years ago. I could not recollect what the difference between a few weeks was between three fairs.

JUDGE LUCKERN: You know whether it was in existence in March 19-23?

THE WITNESS: I do not know whether it was in existence in March 1975.

JUDGE LUCKERN: All right. Thank you.

BY MR. FELFE:

Q But Mr. Richter says in his statement that it was not printed until at the earliest April or May 1975, is that not correct.

A I believe that is what he testified.

Q Does that not make is physically impossible that you saw this leaflet in Frankfurt in March 1975?

A No. The only reason that I feel that makes it physically impossible is that code on the bottom of the front page says 475 meaning April 1975, which makes me believe that I could not have seen it in the third month of the year 1975 being 3/75.

JUDGE LUCKERN: Now you are referring to RTX-006, the A-475.2?

THE WITNESS: Correct. The assumption was that I assumed that the ISH was held also in the month of April and not in the month of March.

JUDGE LUCKERN: What does the A stand for in what I just read, the A-475.2?

THE WITNESS: I do not think.

JUDGE LUCKERN: And do you know what the .2 means?

JUDGE LUCKERN: But it is your testimony that the 475 does refer to April 1975?

THE WITNESS: I have seen at least ten to fifteen brochures from the Freudenberg Company bearing some codifications which always have a central number of some kind that indicates a year, the last two digits of a year in a century plus a number that corresponds with a month, anywhere between 1 and 12.

* * *

Q Do we agree, Mr. Borkent, that it is physically impossible that you saw this leaflet in Frankfurt at the ISH fair in March of 1975?

A Knowing that the fair was held in March, yes.

Q So we agree that is was physically impossible?

JUDGE LUCKERN: He said yes.

BY MR. FELFE:

Q But when you believed that the fair was in April, you thought that you did see it in Frankfurt, right?

A It is the biggest of the three fairs, and it is also the most important one for Freudenberg.

JUDGE LUCKERN: But there was not a fair in April though, I mean you know that, I mean there was not any Frankfurt fair in April?

THE WITNESS: No.

JUDGE LUCKERN: I mean in April of 1975?

THE WITNESS: Well, there are years that it is held in April.

JUDGE LUCKERN: But I mean was there a fair in April of 1975 in Frankfurt?

166

THE WITNESS: I found out after the statement that the fair was two weeks earlier than the month of April.

JUDGE LUCKERN: So there was no Frankfurt fair, at least the fair that you are talking about here in April of 1975?

THE WITNESS: That was in March.

JUDGE LUCKERN: Go ahead.

(Borkent Tr. at 202 to 205).

63. Borkent continued:

BY MR. FELFE:

Q When you found out, Mr. Borkent, that the Frankfurt fair was too early, that contrary to your statement that you could not have seen this leaflet, what did you do then?

A You are misrepresenting the sequence of events in my thoughts.

Q Well, you straighten me out.

Did you not do something after you realized that the Frankfurt fair was too early to suit your purposes?

A My statement from the beginning had been that it was at either of the three fairs. You were the one who confronted me with a copy of the book that indicated the date, that it was two weeks earlier than I thought.

Q Did you not get a copy of that book from Mr. Eilbrecht before I ever showed it to you?

A No. I received the information over the phone briefly before.

Q On the phone before from whom?

A From Mr. Eilbrecht.

Q So when you realized that the fair in Frankfurt was too early to suit your purpose, you called Mr. Eilbrecht and said find me some fairs that were after April 1975, right?

A No. The three fairs were held in a very short period of time, and they were the major fairs of that year.

Q Why did you call Mr. Eilbrecht at all; he is your Dutch patent agent, right?

A Yes.

Q Is he a fair expert?

A No.

Q Is he a pocket filter expert?

A No.

Q Why did you call him to find out about what fairs were held in 1975?

A Because he has experience with the organizers of the fair organization, so he knew the telephone number and could call them.

Q So you had him call Frankfurt to find out when the fair really was, right?

A You asked him to research it; and in the course of that, he called Frankfurt and got the written confirmation that the fair was in March?

A I just wanted to refresh my mind what the exact dates of the fair were.

Q And you did that by assigning to Mr. Eilbrecht the task of identifying fair dates in 1975?

A Is it not normal that you refresh your memory twelve years after the fact?

Q I am asking how you did that, how you refreshed.

And as I understand it, you called Mr. Eilbrecht to do that research, is that right?

A There is no difference whether I call myself to find out the facts or whether I ask somebody to call for me, or whether somebody calls for me knowing that I would like to know the exact date.

Q The fact is that you assigned Mr. Eilbrecht to that task, right?

A I did not assign him.

Q Requested him to?

A No.

Q Asked him to research it?

A No.

Q All right. You tell me what you said to him.

A I did not say anything to him. I presented him with this brochure out of my files. And I simply said this must have been handed out to me at the fairs that were held in early 1975. And they were, the ISH, the VVS, the Gothenburg, and in Stavanger.

Q In your first interrogatory responses, Mr. Borkent, you know, because we went through this at your deposition, you identify only the Frankfurt fair as one that you had attended, and you stated that it was in April of 1975, correct?

A That was my recollection that it was held then.

Q And subsequent to that, as we just discussed, you tried to identify dates from additional fairs, and you asked Mr. Eilbrecht to assist in locating fair dates in 1975, yes?

A No.

Q Well, then what did you ask him to do, how come we keep getting things from Mr. Eilbrecht, you tell me what happened?

* * *

THE WITNESS: I said that I handed the brochure that I had in my files saying that I must have picked this up at the ISH, at the Gotenborg, or at the Stavanger fair.

BY MR. FELFE:

Q So why did you need Mr. Eilbrecht; you did involve him, did you not?

A Yes. I just told you that I gave him the brochure, and I involved him by telling him that I picked that put [sic] at either of those three fairs.

JUDGE LUCKERN: When did this happen, this contact with Mr. Eilbrecht, about when?

THE WITNESS: Back in September.

JUDGE LUCKERN: September of 1987?

THE WITNESS: Yes.

* * *

BY MR. FELFE:

Q So Mr. Eilbrecht gave you dates for the Gothenburg and Stavanger fairs?

A He informed me of the dates of the fairs, yes.

Q Those two fairs?

A Three.

Q Pardon.

A Three.

Q Also the Frankfurt?

A Yes.

Q Any more?

A No.

Q Just those?

A I did not mention any more fairs.

(Borkent Tr. at 205 to 210).

64. The substance of Borkent's testimony regarding RTX-006 was made known to Richter in October 1987 which testimony was then in affidavit form. Borkent testified that Richter was neutral about the substance of said testimony when he first heard about it; that Richter did not tell Borkent that the "A 475.2" on RTX-006 and which Borkent interprets as a printing date was in fact a printing date, Borkent testifying that "I have 15 years of history of seeing Freudenberg brochures". (Borkent CPX-2 at 127 to 130).

65. Sometime in the spring of '84, Filtrair b.v. purchased a "Viledon" pocket filter. In the summer of 1984, Filtrair b.v. did the first trials of a pocket filter and the first pocket filter made by Filtrair b.v. was not as a single pocket with a single frame. (Borkent CPX-2 at 119, 120).

66. Borkent denied that he received RTX-006 from Richter. (Borkent CPX-2 at 125).

67. Borkent on November 19, 1987 has testified that he did not then seek any corroboration of the substance of his testimony with respect to RTX-006 which was then in affidavit form and which affidavit has been presented to complainant. (Borkent CPX-2 at 127, 130).

68. In May 1975 Borkent was employed at a company called Hunter-Douglas in Rotterdam. He was financial comptroller of the European Division which was a reasonably important position. Hunter-Douglas is a multimillion dollar company. Borkent was concerned at Hunter-Douglas with aluminum products and heating boilers. Borkent worked for Hunter-Douglas from 1973 until the end of 1982 or early 1983. Borkent does not recall the name of the hotel he stayed at when he went to Goteborg in May 1975 to attend the fair. At Goteborg Borkent did not meet anybody that he knew. Hunter-Douglas also did not exhibit any product at Goteborg. Freudenberg did not have a booth at the Goteborg fair although Borkent testified that Freudenberg product were there. (Borkent Tr. at 210, 211, 212, 213).

69. Hunter-Douglas did not exhibit products at the Stavanger fair. Borkent does not know where he stayed at when he was in Stavanger for the fair. Stavanger is a small town in Norway. Borkent did not recall any of the people he met at Stavanger. Borkent has no documentary evidence that he was in Goteborg or in Stavanger. Borkent can remember no one that he met or

171

recognized at the fair in Stavanger. (Borkent Tr. at 214, 215).

70. Borkent's work at Hunter-Douglas did not involve filter products. (Borkent CPX-2 at 10).

71. Borkent joined Hunger-Douglas, an aluminium conglomerate company based in Rotterdam, the Netherlands, in 1973. He worked for Hunter-Douglas until 1982. (Borkent CPX-2 at 4, 5).

72. Borkent testified that Ove Jodal was one of the "Viledon" distributors in Norway and while in Stavanger in May 1975 he did not see a booth with a Freudenberg compact filter he remembers "seeing a booth of Ove Jodal." He testified that he did not state whether he saw a compact filter in the Ove Jodal booth. (Borkent Tr. at 216).

73. Borkent has no documentary evidence as to when he received RTX-006. Borkent testified that he met Richter first in late 1982 and that he never spoke with Richter through the years 1975 through 1981. (Borkent Tr. at 220, 221).

73a. Richter testified on direct that the "Viledon" pocket filter units were displayed only behind closed doors at the ISH trade fair in Frankfurt/Main, West Germany, but that RTX-006 was not printed until after that fair. He further stated that the "pocket filters were also to be exhibited at the VVS exhibition stand of the Viledon filter representative in Goteborg, Sweden, which took place around mid-1975." Richter did not state any reason for this unsupported belief that the filter model was to be exhibited in Goteborg. He added that he could not say with certainty whether the pocket filters were exhibited at the VVS fair, which he did not attend. Additionally, Richter was in charge of sales in West Germany and did not have responsibility for export sales and marketing, which was then Gsell's responsibility and would apply to marketing in Goteborg and Stavanger. Borkent testified that he had asked Richter in October 1987 about what Freudenberg did or didn't do at the 1975 Europe trade fairs and Richter didn't know exactly what happened in those years. Borkent testified that Richter has been to many more trade fairs than Borkent's own attendance at apporximately eighty fairs and that his memory of such fairs are blended together and indistinct, and that Richter was not able to corroborate Borkent's statement about those fairs. (Richter RTX-005 at 4-5; Borkent Tr. at 226-230; Gsell Tr. at 635-637).

74. Dieter Gsell since 1960 has been an employee of Firma Carl Freudenberg of Weinheim, Germany. From 1970 and throughout 1975 until the hearing he has been an export manager of the Filter Division of Firma Carl Freudenberg. He personally was in attendance at the Frankfurt Fair in March 1975. (Gsell CX-62 at 1).

75. Complainant's Gsell testified:

> The promotional leaflet, Gsell Exhibit 4 (CX-18), [RTX-006] has at the right-hand side of the first page the small legend "A 475.2". This means only that the leaflet was "laid out", i.e., designed, in April 1975 and does not indicate any printing or availability date. Printing and distribution occurred subsequent to lay-out. As a result of various difficulties and delays encountered in the initial manufacture of the pocket filters, the product could not be brought to market until the period starting in November 1975. Earlier distribution of leaflets such as Exhibit 4 would have been commercially pointless and out of keeping with the practice of Firma Carl Freudenberg.

(Gsell CX-62 at 3).

76. Gsell testified that the Carl Freudenberg Filter Division attended no fairs in 1975 (other than the Frankfurt March 1975 fair) at which any Freudenberg pocket filter elements or literature relating to such pocket

filters would have been on display and "no fairs" include the May 1975 exhibitions at Goteborg and Stavanger. (Gsell CX-62 at 2).

77. Gsell testified that he personally was in attendance at the "International Fachmesse Sanitar Heizung Klima" which took place March 19-23, 1975 (the "ISH Frankfurt Fair"); that no pocket filter elements of any type were displayed at that time by Freudenberg and no literature promoting such pocket filters was distributed or otherwise made available to fair attendees; that this is substantiated by the excerpt from the official fair catalogue (CX-19) which lists the products displayed by Freudenberg and which listing does not include pocket filters; and that by contrast, the catalogue (CX-64) for the next following ISH Frankfurt Fair, which was held on March 23-27, 1977, shows that pocket filters are the first item listed for the Freudenberg Booth. (Gsell CX-62 at 1, 2).

78. CX-19 is in German. No translation was provided. The first page does state "International Fachmesse 8, ish Samitar Heizung Klima Frankfurt/m. 19-23, May 1975 Offizeller Katalog" The second page states in part:

> Carl Freudenberg
> VILDEON-WERK, Abt. Filtermedian
> 6940 Weinheim/Bergestrasse, Pos Tfach 1830.
> VILEDON-Filtermatten fur Abluflreinigung.
> VILEDON-Filterstofle fur Abwasserreinlgung,
> VILEDON-Filterstoffe fur Trink-und
> Brauchwasserfiltration,
> VILEDON-Filtermatten fur Luftreinigung,
> VILEDON- Filterstoffe fur Industrie-Entstsubung,
> Separator VILEDON fur Akkierrulatoran

(CX-19).

79. The first page of CX-64 states "Official Catalogue Frankfurt/M. 23,-27,3,77 ISH". The second page states in part:

> Carl Freudenberg
> VILEDON-WORKS, Filter Media Div.

P.O. Box 1830, 6940 Weinheim/Bergstr.
VILEDON COMPACT FILTER BAG UNITS
VILEDON Filter Mats for Air Purification
VILEDON Filter Mats for Exhaust Air Purification
VILEDON Filtering Fabrics for Drinking and
Non-Portable Water Filtration
VILEDON Filtering Fabrics and Industrial
Dust Removal
VILEDON Nonwovens for Dyebed Filtration
Separator Viledon for Accumulators

(CX-64).

80. Gsell testified that sales activities with the nonwoven pocket filters in the foreign market stated in 1976 and domestic (German) activities in November 1975 as indicated by the first price list (CX-65); that the printing of this price list was a necessary precondition to bringing those pocket filters to the German market; and that to the best of Gsell's recollection, no nonwoven pocket filters were commercialized by Carl Freudenberg before November 1975. (Gsell CX-62 at 2).

81. CX-65 is a price list for VILEDON COMPACT pocket filter-units dated November 1975. (CX-65).

82. Gsell in 1975 was responsible for the sales of the "Viledon" compact filter products for export worldwide. He was then not directly responsible for the domestic sales of the filter within Germany. Today Gsell has much more responsibility at the Firma Carl Freudenberg. Gsell remembers very well the trade fair held in Frankfurt between March 19 and March 23, 1975. That fair (the IHS Fair in Frankfurt) is a very important fair for Europe. (Gsell Tr. at 635, 638).

83. At the 1975 Frankfurt Fair, Gsell was in Freudenberg's trade booth during the whole time the fair lasted. Before Freudenberg set up its booth at the fair there was some planning and meetings. Normally there would have been two to three meetings. (Gsell Tr. at 636).

84. Gsell testified that Freudenberg did not publicly promote the "Viledon" compact filter bag in March 1975. (Gsell Tr. at 642).

85. Gsell testified:

> Q Mr. Gsell, you did promote the compact filter bags in March of 1975 to certain selected customers, did you not?
>
> A Our representatives around Europe were invited to attend the ISH Fair in Frankfurt in March 1975. These are companies that have exclusive sales rights for our product for one country, each representative for one country.
>
> These companies with whom we have cooperated for many, many years are also called the Viledon family. We had shown the finished compact to the representatives of these companies in the booth at the Frankfurt ISH Fair.
>
> Q And you did that behind closed doors, is that right?
>
> A There were separate little rooms for discussions provided in the booth. One of these small rooms could be locked. Mr. Huber, who was my former boss, had asked me to see to it that no one would be able to enter this small room without his permission. And I, myself, and also the ladies and gentlemen working with me in the booth saw to it that nobody could go in.
>
> Q Mr. Gsell, you did display the Viledon compact filter to representatives of these other companies in this special room at the Frankfurt Fair, is that not true?
>
> A We showed them to these representatives, but we did not display the products in the booth in any public fashion.
>
> Q Mr. Gsell, the Freudenberg Company in 1975 not only sold the compact filter directly itself, but you also sold the filters through certain independent distributors, is that not true?
>
> A In 1975, we distributed the Viledon filter products on a worldwide basis. Viledon filter media, not products. And to the best of my recollection, we started distributing the compact pocket filters abroad in 1976.
>
> Q Mr. Gsell, there is an independent distributor that distributes Freudenberg products called Industrie Filter, is there not?

A The company by the name of Industrie Filter is our Danish representation.

Q And at the Frankfurt Fair, Mr. Csell, was not Mr. Moldow from Industrie Filter Company, was not Mr. Moldow shown a sample or shown one of the new Freudenberg Viledon compact filters?

A The answer is that is possible.

Q And another one of the independent distributors that distributes Freudenberg products is called Ultramare, is that not true?

A The company Ultramare was our representation in Sweden.

Q And is it not true, Mr. Gsell, that at the Frankfurt Fair in March of 1975 that Mr. Lindquist from the Ultramare Distributing Company was shown one of the new Viledon compact filters?

A That may well be possible. Of course, excuse me, I cannot say exactly whether these gentlemen were there at that fair, but it may well be. It can be assumed that they were. Because I do not have documents here right now to tell if they were or not.

Q Now Mr. Gsell, the representatives of these distributor companies, they were also given copies of the leaflet which is identified as RTX-018; they were given copies of that at the fair, were they not?

A I cannot verify that, because I was only present during one of these discussions in this locked discussion room. And hand produced or hand manufactured samples of the compact filter were shown while I was present in this discussion.

* * *

THE INTERPRETER: Since I asked the witness for clarification, I forgot to add that he said that hand manufactured samples of the compact product were shown, and that this leaflet [RTX-018] was not handed over.

BY MR. POLK:

Q Well, Mr. Gsell, if you were not present in the little locked room during most of these discussions, you do not know whether the leaflets were handed over or not, do you?

A That is correct. With this leaflet, if it was shown at all, the technical data of the filter was to be demonstrated. I base my considerations on the fact that the leaflet was present, and that this leaflet was present as a description of the technical data of this new pocket filter to describe the filter to this limited circle of persons.

* * *

THE INTERPRETER: Thank you. I should just like to repeat the last part of the question, where he said I base my considerations on the fact that the leaflet was present as a first technical document for describing these new pocket filters in this small circle.

* * *

THE INTERPRETER: I guess I'm a little confused right now, but I assume it's a term that's always difficult to translate, and I would say I assume that what Mr. Felfe is referring to, is that the witness said I assume, where I said I base my considerations on the fact that the leaflet was present. That's all I can say right now.

MR. FELFE: That's correct, Your Honor. That was my point.

TI . INTERPRETER: There would be a more correct translation, I agree, with Mr. Felfe. That's correct.

JUDGE LUCKERN All right. Well, you're under oath, too, as you know.

THE INTERPRETER: I am, I am.

JUDGE LUCKERN: You certainly, I don't consider that Ms. Rosenbaum [translator agreed upon by the parties] would be influenced by anybody. She has been doing a job, I don't think she's been influenced by anybody in this court room. I haven't seen it, and if anybody wants to make that argument, they can make the argument.

Obviously I've had this before, on my last case, I mentioned it I think, earlier. My last case, where the translator was doing a very good job, and yet when we get into technical terms, or terms that were particular to the art, or patent terms or something, sometimes people do know more.

178

> I'm not saying, but certainly, Mr. Felfe, hasn't been qualified, or hasn't been agreed upon as a translator.
>
> * * *
>
> JUDGE LUCKERN: I know, but Mr. Polk has moved to strike. I'm not going to grant the motion, I'm denying the motion. I'm going to rely on Ms. Rosenbaum. As far as I'm concerned, your credibility is top notch, and I do not feel that you have been influenced by anybody in this room.
>
> If the argument wants to make that you have been influenced, when you do make a change based on what you heard from somebody else, they can make that argument and I'll listen to it, but right now your credibility is 100 percent as far as I'm concerned.

(Gsell Tr. at 642 to 649).

86. Gsell testified:

> Q Mr. Gsell, you stated that at the Frankfurt ISH trade show certain exclusive foreign distributors were shown a hand-made model of a Viledon pocket filter. Do you have any idea as to how many of these foreign distributors --
>
> A I would estimate approximately eight.
>
> Q Thank you. And in your cross examination, you also used the phrase in connection with these distributors "Viledon Family" What did you mean by that?
>
> A We work -- and this is the normal policy of the Freudenberg Company -- with our partners for a long number of years on a long-term basis. For this very reason we used the term "family" of these distributorships which are independent companies with whom we have had a long-standing contact, a very strong contact.

(Gsell Tr. at 675).

87. Gsell testified:

> Q Mr. Gsell, ... You were not watching Mr. Richter the entire time, were you?
>
> A That is not possible, that I would have watched or observed Mr. Richter during the whole time.

179

Q And so you don't know on what occasions Mr. Richter may have gone in to the close room, or may not have gone in to the closed room, isn't that true?

A It had been agreed upon that only a certain group of people would be shown the hand manufactured compact filter samples. I can say no different.

Q It had been agreed upon when? At a meeting?

A This was told to all in the booth. All who were participating in this fair. So that nobody would be able to enter this locked, lockable room, without permission, and be able to see these samples.

Q Well now, Mr. Gsell, you were the person in charge of international sales at that time, isn't that true?

A Yes.

Q And if anyone had been responsible for showing off this new product to the Freudenberg family companies, in the secret room anyone who would have been entrusted with that important task, it would have been you, wouldn't it?

A The position that I held then was not the position that I'm holding today. At this time, that is after 1970, the export department was developed. By 1975, this department consisted of 3 persons.

What I mean to say by this is that my importance at that time was not the same as today, and my boss, Mr. Huber, reserved the right for himself to show these samples himself.

Q So you don't know exactly to whom your boss, Mr. Huber, may have shown the filters, isn't that true?

A That is right, but I must add that from how I know Mr. Huber, that he only must have shown them to a very clearly defined circle of persons.

Q You can't really say, can you, Mr. Gsell, whether or not Mr. Huber may have shown the new Viledon filter to some of the selected German domestic customers of Freudenberg?

A That is correct.

Q Now, Mr. Gsell, if there had been a sales of the compact filter, a sale to an international customer, during 1975, you would have known about that sale, wouldn't you?

A I remember from the whole development of this story, that as of 1976, we marketed or sold the Viledon compact pocket filters.

Q Mr. Gsell, you know the name of a company in Johannesburg, South Africa, don't you, the Brandt Engineering Company, you've heard of that, haven't you?

A Yes. I know this name.

Q And Brandt Engineering Company has bought compact filters from Freudenberg, hasn't it?

A They bought compact pocket filters from us, and later on manufactured them themselves.

Q Isn't it true, Mr. Gsell, as early as June 1975, the Brandt Engineering Company in Johannesburg, South Africa, bought a substantial number of the Viledon compact filter from Freudenberg, isn't that true?

A You said June 1975?

Q Yes, June, '75.

* * *

THE WITNESS: My activities with the export of the pocket filter started in 1976, and I cannot remember that we sent these to Brandt, but it's a long time ago.

* * *

THE INTERPRETER: The last sentence of the answer is, but in my opinion, we started in 1976 with these sales. Thank you.

(Gsell Tr. at 652 to 654).

88. Gsell calls RTX-006 a leaflet of "Viledon." (Gsell Tr. at 657).

89. Gsell testified:

Q Sir, that exhibit, RTX 006, that was used for the sale and promotion of the Viledon compact filter, was it not?

A I can only recall that after, or as of November, starting with November 1975, the product was finally available. Corresponding to this product, we had developed a brochure which corresponded to the Freudenberg quality.

This is the brochure shown here yesterday or the day before. I do not think that this sheet was distributed by us.

Q Mr. Gsell, it must have been distributed by someone on behalf of Freudenberg, wasn't it?

A Why should this have been, sheet been distributed, which does not make a very favorable impression of the Viledon compact filter product, if we had a new brochure, which was a very comprehensive brochure, looked beautiful and had a number of pages.

JUDGE LUCKERN: I'm a little confused. What are talking about? Why should this be distributed if we have a beautiful one. Is the one, is he talking about 006, and there was one that was much more beautiful than 006?

THE WITNESS: No, that is the beautiful one is not this leaflet, but it's a brochure that had been developed for the point in time when the pocket filters would be marketed.

And that brochure that I am referring to was mentioned here yesterday or the day before.

* * *

Q You said that that brochure [RTX-006] does not do a very good job of portraying the Viledon filter, is that what you said?

A That is right. That is not the style in which we normally design brochures or leaflets within our company in order to portray a product.

* * *

THE INTERPRETER: Thank you. After the witness said this is not the style in which they usually present a product, the last sentence was, this is very weak here.

(Gsell Tr. at 657, 658, 659)

90. With reference to RTX-006, Gsell testified:

Q Mr. Gsell, you did not prepare the exhibit or the leaflet which is marked as Exhibit RTX-006, did you?

A No.

Q And you do not know who prepared that leaflet, is that correct?

A No.

Q And you do not know who sent that leaflet to the printer to be printed, do you?

A It must have been done by our advertising department.

Q Well you don't know then, who in the advertising department sent the leaflet to be printed, is that correct?

A I cannot know that, that's another department.

* * *

Q And you could not know from your own personal knowledge, when the leaflet, RTX-006, was sent by someone in your advertising department to the printer to be printed? You couldn't know that, could you?

A. Yes. Correct.

Q Sir, may I see the copy of your witness statement that you have in front of you? Mr. Gsell, did you write that witness statement?

A In German, yes.

Q The entire statement?

A With support from our patent department.

Q Mr. Moldenhauer?

A Yes. In order to take into account and observe certain guidelines as to how this is to be structured.

Q Did Mr. Moldenhauer or someone elase in the patent department make some changes in your original draft of you statement?

A No, I don't believe so.

Q Mr. Gsell, that copy of your witness statement that you have signed, is that a copy that you brought up to the witness stand with you, or was that given to you by the clerk, Mr. McKie?

A It as handed to me.

Q Now, Mr. Gsell, how many times have you prepared a sales brochure of any type for the compact filter?

A I had participated throughout the last years in several brochures concerning pocket filters, filter masks, general air filter material, as far as the design and content is concerned.

Q And did you participate in the preparation of sales brochures back in 1975?

A No.

Q You testified a moment ago about a much better, more elaborate brochure, advertising the filter. Did you participate in preparing that better brochure?

A No. This was also in 1975.

(Gsell Tr. at 661 to 663).

90b. Gsell testified on cross examintion that the sales leaflet or brochure marked RTX-006 is in the German language and so it would be intended for distribution to customers within Germany and countries where German is spoken such as Austria. (Gsell Tr. at 658).

90c. Respondents' Borkent testified that Freudenberg does distribute different language versions of the same literature in the various countries in Europe. He additionally testified that the 1975 Stavanger fair was not an international fair, but was a relatively small fair intended for the Norwegian market. Similarly, he testified that the larger Goteborg fair is primarily for Swedish customers. (Borkent CPX-2 at 85, 89, 95, 119).

91. CX-15B is the German version of the more comprehensive sales brochure for the Viledon compact filter bag unit covered by the '375 patent and referred to be Gsell in the previous finding. CX-15A is the English version. (Gsell Tr. at 669).

92. CX-15 and CX-16 are Freudenberg brochures relating to "Viledon" compact filters. (Borkent Tr. at 199).

93. CX-16 is the most commonly used brochure used by Freudenberg in the 1984-1986 period. (Borkent Tr. at 200).

94. Bauder cannot tell whether RTX-006 shows a media of fusible fibers. Moreover it states "synthetic" fibers and Bauder's understanding is that it could be either fiberglass or anything man-made. (Bauder Tr. at 298).

95. Bauder agrees that what is shown in RTX-006 could be a pocket that has been folded in the back the way it has been done with the Hi-Flo and Hi-Cap filter or the pockets could be made of two halves or two pieces and that he cannot see the back or the wedged edge in the rear on the filter shown on RTX-006. (Bauder Tr. at 298, 299).

96. With reference to RTX-006 Bauder cannot unequivocally say that the three horizontal lines on the side of the top illustration that extend from the frame header back towards the back end of the filter is a welding as opposed to a sewing. (Bauder Tr. at 299).

97. Bauder sees wedge shaped supports between the sides of the pleats on the illustration shown in RTX-006. Bauder is unable to tell what the supports are made of. When Bauder was asked whether he can tell how the wedge shaped supports are adhered, if in fact they are adhered to the sides of the filter pocket, Bauder testified "Not for certain." (Bauder Tr. at 301).

98. As to RTX-006, Bauder further testified:

> Q Do you see in this exhibit, Mr. Bauder, any pyramidal spreaders of spacers? Do you know what I mean by that, pyramidal?

A You mean a spacer or support or something that goes around the pleat?

Q No. I mean something that is of a pyramid shape?

A Oh.

Q Front to back.

A I see something that appears to be triangular in shape.

Q Does that look flat to you, or how would you describe it?

A. Relatively flat.

Q You've stated, Mr. Bauder, that from this exhibit, you cannot tell that there are any weld lines, right, that the lines could be sewing?

A I can't tell from the photograph how those lines were formed.

(Bauder Tr. at 302).

99. As to RTX-006, Bauder testified:

Q Mr. Bauder, you were asked several questions at the end of Mr. Felfe's examination about the colored brochure identified as RTX-006. Do you have the translation of the text that accompanies the pictures?

A Yes.

Q On the right hand side of the page, there is a row of dashes. Do you see them?

A Yes.

Q And could you read the second entry next to the second row of dashes?

A "Inherently stable and dust proof welded filter bags."

Q Yes.

Now, referring to the photograph in RTX-006, and reading that passage, or keeping that passage in mind, how would you conclude that the seams were joined, that the edges were joined in the filter depicted in the brochure?

A By welding.

Q And if welding were used, what would you conclude, if anything, about the filer media.?

A That it's a thermoplastic synthetic fiber media.

Q Could I ask you whether or not it would be woven or non-woven?

A I guess it could be either. One would presume it's non-woven.

Q Would you presume that it was fusible fiber?

A Yes.

* * *

Q And how would you conclude the spacers are attached to the filter media?

A By heat sealing onto it, fusing them, welding them.

* * *

Q Mr. Bauder, the reference to welding in the translation which I referred you to also when I asked you about this exhibit is inherently stable dust proof weld filter bags. How can you tell that the welding does not refer to the attachment of the filter pocket to the front holding frame? Couldn't that be the welding as far as you can tell from this amount of information?

A I suppose.

Q Can you tell from this exhibit that there is welding at the wedge edge in the back?

A No.

* * *

Q Can you be certain that the lines on the side of the filter pockets are welded? Could they not also be sewn with the indent that you get with seams?

A Yes.

Q Mr. Bauder, you were asked about the action of pyramidal spacers, right? And you said that they didn't do anything particularly good? Is that right?

A I don't think that's what I said.

Q What did you say?

* * *

THE WITNESS: I believe I said they had no function when there was no air flow through the filter.

BY MR. FELFE:

Q Oh, but when there is air flowing through, do they have a function?

A Yes.

Q Do they serve functions other than the filamentary stays that are disclosed in your '059 patent with air flowing through?

A I don't think so.

Q Do you have any experience on which you base that answer, Mr. Bauder?

* * *

A Yes.

(Bauder Tr. at 312 to 315).

100. Gsell does not know from his own personal knowledge when RTX-006 was sent by someone in Freudenberg's advertising department to the printer to be printed. (Gsell Tr. at 662).

101. Gsell testified:

Q Mr. Gsell, I would ask you to look at RTX-019.

And I would ask you, sir, is that also a sales leaflet advertising the Viledon compact filter?

A This is not a brochure or leaflet in that sense. It is a sheet which was attached to technical journals, or put into technical journals loosely rather.

> Q And Mr. Gsell, you did not prepare either RTX-019, or CX-15, or CX-15B, is that correct?
>
> A That is correct.
>
> Q And finally, just one last question, I believe, Mr. Gsell.
>
> Looking at RTX-019, it would be true, would it not, that that data sheet replaced the earlier version which was RTX-006?
>
> A No, that is not correct. This is a sheet which was used -- RTX-019 is a sheet which was put into technical journals as an attachment. Whereas the other first sheet, the first sheet, RTX-006, has technical data on the back. And the journal attachment shows a filter wall as a reference for application.

(Gsell Tr. at 669, 670).

102. Herbert Moldenhauer resides at Gartenstrasse 8, 6521 Gundersheim, Federal Republic of Germany and is currently employed by Firma Carl Freudenberg, Complainant's German affiliate, at 6940 Weinheim, West Germany as Deputy Head of its Patent Department. (Moldenhauer CX-61 at 1).

103. Moldenhauer has a degree as a Professional Engineer (Diplomingenieur) and began his employment with Firma Carl Freudenberg on October 1, 1970. Initially he was active in the industrial operations of Freudenberg and then entered the Patent Department on March 1, 1975. The Patent Department was supervised by an attorney and he was trained in German patent law and assumed responsibility for filing patent applications for Firma Carl Freudenberg. (Moldenhauer CX-61 at 1).

104. The Invention Notification signed by the inventors and the "5% contributors" which was sent back to Moldenhauer on September 16, 1975, requires in paragraph 7(a) thereof the signers to list

> "(a) External Prior Art (Domestic and Foreign Patent Applications and Patents, Publications in Journals, Leaflets and the like, prior public use):"

The only entry in this space is a reference to the Burk patent application draft of August 22, 1975 (CX-68) which contains a general description of the prior art as then reflected in the German patent application as filed and in the U.S. patent at issue. It does not refer to any Freudenberg-generated prior art. Paragraph 7(a) of the Invention Notification requires the inventors and others involved to list prior art leaflets, prior use, prior sales and the like, but no entry was made by any of the ten signers of the document. Moldenhauer testified that that paragraph 7 is an important part of the Freudenberg Invention Notification form since the Patent Department is responsible for insuring that no prior art, including Freudenberg generated prior art, stands in the way of patent filing; that the Patent Department routinely ensures that the inventors or other involved persons did not engage in prior public acts which could impair patenting of the invention, before patent application filing is authorized; that this is confirmed by the absence of entries in paragraph 7(a) (other than the reference to the Burk patent application draft which disclosed background prior art of other companies), of the Invention Notification signed by 10 inventors and contributors assisting in the invention disclosure process. (Moldenhauer CX-61 at 5, 6).

105. Respondents Request for Admission Nos. 6, 7, 8, 9 and 10 and complainant's answers thereto reads:

> 6. Admit that you displayed a physical example of the Viledon "Compact Grob" filter at the International Fachmesse Sanitar Heizung Klima trade show held in Frankfort, Germany for attendees to inspect in March, 1985. [sic].
>
> RESPONSE: DENIED.
>
> 7. Admit that you displayed a physical example of the Viledon "Compact Grob" filter at a Stavanger, Norway trade show in May 1975 for attendees to inspect.

RESPONSE: DENIED.

8. Admit that you displayed a physical example of the Viledon "Compact Grob" filter at the Goteborg, Sweden trade show in May 1975 for attendees to inspect.

RESPONSE: DENIED.

9. Admit that you displayed a physical example of the Viledon "Compact Fein" filter at the International Fachmesse Sanitar Heizung Klima trade show held in Frankfurt, West Germany in March 1975 for attendees to inspect.

RESPONSE: DENIED.

10. Admit that you displayed a physical example of the Viledon "Compact Fein" filter for inspection by attendees at a May 1975 Stavanger, Norway trade show.

RESPONSE: DENIED.

(RTX-013 at 9).

106. Respondents' Interrogatory Nos. 6, 9 and 23 and complainant's answers read:

> 6. If the response to request for admissions number 6 is anything other than an unequivocal admission, specify what portion of the request is not admitted, the factual basis for failing to admit, the identity of the person or persons most knowledgeable about the subject matter of the request; if the request can be altered slightly so that it may be admitted, state what alterations can be made so that the request is admitted.
>
> RESPONSE: This request for admission is denied outright. As is set forth in response to Interrogatory No. 23, *infra*, no prototypes were in existence at the time of this trade show. Those most knowledgeable include Messrs. Gsell, Burk and Huber.
>
> 9. If the response to request for admissions number 9 is anything other than an unequivocal admission, specify what portion of the request is not admitted, the factual basis for failing to admit, the identity of the person or persons most kowledgeable about the subject matter of the request; if the request can be altered slightly so that it may be admitted, state what alterations can be made so that the request is admitted.

> RESPONSE: This request for admission is denied outright. As is set forth in response to Interrogatory No. 23, infra, no prototypes were in existence at the time in question. Those most knowledgeable include Messrs. Gsell, Burk and Huber.
>
> 23. When were the filters depicted in Exhibit 1, or similar products, first fabricated; when were such products first sold; to whom were the products first sold; what Freudenberg employees were involved in the initial sales; when were such products first offered for sale to persons in the United States; when were such products first sold in the United States.
>
> RESPONSE: The first prototypes were fabricated sometime in 1975, not earlier than September, and were first sold in November/December 1975. Complainant does not know the identity of the first customer. Mr. Huber is the most knowledgeable employee regarding this matter.
>
> The first sales in the United States were in mid-1977.

(RTX-013 at 17, 20 and 34).

107. Complainant's Interrogatory No. 21 and respondents' response thereto served on September 21, 1987 read:

> Interrogatory 21
>
> If Respondent is aware of nonwoven gas filter apparatus manufactured and sold by complainant under the name "Viledon" (hereinafter "Viledon Gas Filter Elements"), state the date and circumstances under which Respondent first became aware of the design or structure of such filters.
>
> Answer to Interrogatory 21
>
> April 1975 at the I.S.H. Exhibition in Frankfurt.

Respondents' Pieter K. Borkent is the sole person identified as the person who prepared or participated in the preparation of the answer to this interroatory. (CX-38 at 27, 38).

108. In deposition on November 19, 1987, Borkent testified:

> Q You mentioned, Dr. Borkent, that you had 15 or 20 Freudenberg brochures that you received over time; is that correct?

A Me, personally? Or the company has?

Q Yes, the company. I think you mentioned that number just within the last half hour.

A You have to realize that Freudenberg exhibits at least somewhere between 4 and 10 times in various countries in Europe and distributes various languaged documents, all pertaining to the same thing, but in different languages. And, so, when we pick up these things, they go sometimes in the files and sometimes they do not go into files.

* * *

Q Now, Dr. Borkent, when did you receive the document marked Exhibit 9 [RTX-006], original?

A I received that during either one of three shows that were held in early 1975, whether it be the ISH exhibition in Frankfurt in March, or Gotenborg, I do not exactly remember which of the three, but they were --

Q You mentioned ISH, Frankfurt. Then you mentioned Gotenborg and what else?

A Stavanger.

Q Stavanger in a place where?

A In Norway.

Q Is that an international exhibition?

A Not really. It is intended more for the Norwegian market. But also because of the gas and oil exploration in the North Sea, it has become much more of an international market place than it was before.

Q But in 1975, what was the situation?

A That was then starting to happen.

Q Dr. Borkent, I am sure you recall that in September of this year you answered certain Interrogatories from the Complainant in this case. Indeed, you are identified as the person who prepared or participated in the preparation of the Answers to these Interrogatories. In fact, you are the only person that is listed there. Do you recall supplying information to respond to those?

A Yes.

Q In response to Interrogatory 21, you identified an ISH exhibition in Frankfurt as having taken place in April of 1975. Correct?

A Yes.

Q Was that true to the best of your belief at the time you supplied that answer?

A These exhibitions are always --

Q Could you, would you answer the question? Was that true to the best of your belief at the time you supplied that information?

A Yes.

Q And you understand you are to tell the truth in responding to the formal discovery requests like this?

A Yes.

Q Did there come a time when you altered your response or receive different information as to the time of the Frankfurt ISH exhibition?

A I responded to this question by memory in the United States. I understand that the exhibition, after checking the exhibition manuals, was held in the last week of March.

Q 1975?

A Yes.

Q So, you have access to a manual of exhibitions?

A I usually buy a manual when I go to an exhibition.

Q And you referred to that in attempting to verify that particular date?

A Yes. The ISH exhibition is held every two years in a period at the end of March or first days of April, depending on how the years falls.

Q In this manual of exhibitions that you have, I assume in your Dutch office? Or do you have it at APB, also?

A No, I don't carry those things around.

Q But you have it in the Dutch office?

A I did not see it. I saw a photocopy of the specific page that Freudenberg was exhibiting that we requested in late September from the Frankfurt organization to identify the exact date.

Q Let me clarify how you got the exact date. Did you go to something like a manual in the possession of Filtrair or did you go outside your --

A I went outside.

Q You approached the Frankfurt fair people?

A Yes.

Q And did they have a manual of exhibitions?

A They keep all the manuals from prior years.

Q They keep the manuals. So, you got the pertinent page from them. So, the manual you are talking about is of the Frankfurt fair organization, obtained from them?

A Yes.

Q So, you didn't keep the manual. You had to go to Frankfurt to get the pertinent page?

A Yes. I have many manuals but I didn't even look whether I had that manual.

Q Did you write to Frankfurt? Did you go there?

A No, my patent counsel just called them for the page.

Q Mr. Eilbrecht?

A To establish the exact date.

Q He called them on the phone and they gave him the March date?

A No, they sent him copies of the manual.

Q Now, have you taken similar steps to verify the date of the exhibitions in Gotenborg and Stavanger?

A I believe so.

Q What did you do with respect to the Gotenborg exhibition?

A I didn't do anything.

Q Who did?

A Mr. Eilbrecht did.

Q And what did he find with respect to Gotenborg?

A That it was in approximately that same time frame. I do not recall the exact dates.

Q The same time frame meaning 1975 or what?

A April/May.

Q But do you know it wasn't June or July?

A Not July, no.

Q June, maybe?

A It could be early June. Definitely before the summer.

Q Why do you say that? What basis?

A That was established.

Q By whom?

A By discussing the fairs that took place in that time frame.

Q With whom?

A With Mr. Eilbrecht.

Q So, Mr. Eilbrecht told you that there was a fair in Gotenborg --

A No, no. I led [sic] him to investigate the exact dates.

Q Yes, but after you did that, he is the one that supplied that information?

A That confirmed.

(Borkent dep. CPX-2 at 85, 88 to 93).

109. Borkent continued in deposition:

Q Do you have anything in your records at Filtrair or at APB or anywhere else that would indicate the date of the Gotenborg fair?

A I wouldn't know.

Q Did you attend that fair?

A Passed through.

Q Passed through. How much time did you spend there?

A Usually one day.

Q But, principally, at that time, on behalf of Hunter-Douglas; right?

A It varied.

Q Your employer in 1975 was Hunter-Douglas.

A Yes.

Q Yes.

Q You had a full-time position with substantial responsibilities?

A Right.

Q Did Hunter-Douglas exhibit at the Gotenborg fair?

A No. I would generally take days off.

Q And you passed through, as you put it, the Gotenborg fair. But you have no documents that would indicate you were actually there?

A No. Just like I don't have any documents that I looked for a book with all exhibitors in 1975 at the ISH. These exhibitions take place every two years in all these countries. And I do not keep records of every single exhibition.

Q What hotel did you stay in, in Gotenborg?

A I do not recall.

Q What hotel did you stay in, in Frankfurt?

A I have stayed in so many hotels in Frankfurt, that I do not recall which one it was at that time, but most likely in a town called Langen, a small place outside of Frankfurt away from the high volume number of visitors.

197

Q How many exhibitors were at the Gotenborg fair?

A I do not know, but these fairs are usually fairly large with a couple of halls with at least 40-50 booths per hall or even more.

Q But you have no specific recollection of any in the 1975 fair in Gotenborg?

A You must realize that I see tens or I must have seen 50 to 80 fairs since -- from now back to that period.

Q I appreciate that. Do you recall any of the exhibitors at the Gotenborg fair specifically to your concrete current recollection?

A They are always the same ones every year or every two years or every four years whenever it was. They are manufacturers of heating and ventilating equipment and, of course, the Gotenborg fair is primarily made up of Swedish manufacturers, but also the Swedish representative or distributor of Freudenberg products which at that time was a company called Ultramare.

Q Do you recall seeing a booth by Ultramare?

A I remember seeing booths of Ultramare every time I went to Gotenborg.

Q Well, that is not quite the same. And, Dr. Borkent, I appreciate the problem. It's a long time ago. You have visited dozens of fairs and it must be very, very difficult for you to recall. But I am asking you specifically about an alleged 1975 exhibition at Gotenborg and I ask you whether you recall a Ultramare booth at that particular fair according to your own current knowledge. And if you don't know, you can say that.

A I want to answer to truth, that I cannot recall specifically that one because I have too many recollections of too many shows that I could identify 12 years after the fact exactly that one. If you would ask me specifically about a fair in Gotenborg of a month ago, I would be able to be more specific.

(Borkent dep. CPX-2 at 93 to 96).

110. Borkent continued in deposition:

Q And, indeed, you were, Dr. Borkent, with respect to the more recent fairs in the United States. You remembered the hotel and similar things. And I appreciate 12 years is a long time. I am trying to develop some facts.

Let's move on to Stavanger, Norway. Did you attend that fair?

A Again, I went through there. Since I had never much time because I had another employer, when I went, I went fairly quickly.

Q But you took time off from your regular work in Holland, in Rotterdam and you flew up to Stavanger, which is a rather small town in Norway.

A Yes.

Q And you remember specifically doing that in 1975?

A I speak Norwegian and I know the country very well.

Q I have no quarrel with the fact that you speak Norwegian, but I am interested now about Stavanger in 1975. What hotel did you stay at when you were there?

A I do not recall.

Q Did you overnight?

A I must have overnighted somewhere. I do not recall whether that was in Stavanger or in Oslo.

Q Do you recall where the fair was in Stavanger?

A Just some exhibition hall. I do not really watch very closely -- they are all very similar.

Q Do you recall how large the alleged Stavanger fair in 1975 was? The number of exhibitors?

A Much smaller than the one in Gotenborg and extremely small compared to the one in Frankfurt.

Q Do you recall any of the exhibitors in Stavanger?

A I recall that there were companies represented through their Norwegian distributors which are basically, again, Scandinavian companies producing air filters like Camfil and Freudenberg.

Q But my question was not what was usual in the past 12 years. My question was do you recall specific exhibitors in Stavanger in 1975?

199

A I recall a company called Ove Jodal that was the representative in Norway for Freudenberg.

Q You recall they had a booth?

A. Yes.

Q What did the booth look like?

A I do not remember any exact make-up.

(Borkent dep. CPX-2 at 96 to 98).

111. Borkent continued in deposition:

Q Did you go to Stavanger in connection with your work at Hunter-Douglas?

A No.

Q Did it not exhibit at Stavanger?

A They did not -- I was not involved in any business in Stavanger for Hunter-Douglas. I did attend the ISH exhibitions with them having product there.

Q Yes, but Hunter-Douglas was not an exhibitor in Gotenborg or Stavanger at any time?

A No. They did not market there products there.

Q So, you, according to our testimony, took time off from your full-time job in Rotterdam to go to these places to, as you said, pass through the fairs.

A Yes.

Q And you also stated that the fairs didn't vary much over the years. That's why your recollection is sort of merged; isn't that right?

A They are all the same.

Q They are all the same. How often is the Gotenborg fair held?

A I believe every four years. It was held this past month, again.

Q How often is the Stavanger fair held?

A Also, every four years. These fairs vary. Sometimes they are three years and sometimes they are four because organizing committees sometimes change schedules.

Q Did you go to these fairs in the company of anyone or were you by yourself?

A I was by myself.

Q Do you recall meeting anyone in Gotenborg?

A I met people that I did not do business with, so, I do not recollect personalities that I knew at that time.

Q Can you recall anyone that you saw or met at the fair in Gotenborg in 1975?

A No, I cannot.

Q Can you remember anyone that you met or recognized at the fair in Stavanger in 1975?

A No. Those were new markets for me.

Q The answer is, no?

A No.

Q Do you have any documentation, such as travel vouchers, American Express receipts, any document of any kind that would substantiate that you were in fact in these places at that time?

A No, I do not.

Q Dr. Borkent, you say that you came into the possession of Exhibit 9 [RTX-006] or the original thereof at one of the three fairs: Frankfurt, Gotenborg, or Stavanger in '75; right? That is what you are saying?

A Yes.

Q You, yourself, stated a short while ago that the exhibit according to your belief was printed when?

A In month 4 of 1975, being April.

Q In April of '75. But you told us, also, a few minutes ago, that you have never seen a Freudenberg brochure which appeared prior to the date on the last page. Isn't that right?

A Exhibit or showing the parts that we are discussing, the gas filter element. There are brochures of filter mats prior to that date. Not showing gas filter elements.

Q I'm not sure you understood my question. My question is do you recall that a little earlier today you stated that you have never seen a Freudenberg brochure or leaflet that bore what you considered to be a printing date that was distributed prior to that date. You said that earlier and I am just trying to put it into context here.

A Bearing a picture of a gas filter element, I must add.

Q Well, all right. Let's talk about those brochures. That's right. You have never seen one prior to the date that you identify as a printing date; right? Now, you revised your Interrogatory response to our Interrogatory 21, where you had said April 1975 to us. In September '87, you revised that to March 1975 and October '87 when you apparently were unable to confirm the April date. What makes you think you gained possession of Exhibit 9 at the Frankfurt fair which was held at a time prior to what you called the printing date of the exhibit? What makes you say that?

A I say that because in the same period of time, that fair is always being held. And in some years, the fair is held, and since 1975, it has been held now seven times. These fairs take place between the dates somewhere the 24th of March and the 2nd or 3rd of April.

Q So, you really cannot distinguish today from your own recollection between the various ISH fairs held in Frankfurt?

A I can to the point that to my mind I recollect seeing these bag filters, pocket filters at the Freudenberg booth over the years and, of course, the first time that they came out with these products was in 1975. And this brochure is a brochure that is very rudimenmtary and clearly indicating to be the first brochure and also indicated by the date and the time that this product was launched.

Q I understand that you've seen many Freudenberg brochures over the years.

A Yes.

Q But I am interested in at the moment is whether you have a specific current recollection that you saw Exhibit 9 [RTX-006] in March 1975 at the Frankfurt ISH fair.

A I said I already am not sure whether it was either from the ISH Fair in Gotenborg or the Stavanger fair.

Q I am focusing on the Frankfurt fair. I am asking you what I think is a simple question. Do you have the specific present recollection of having been given this Exhibit 9.

(Borkent dep CPX-2 at 98 to 102).

112. Borkent continued in deposition:

Q Whether you gained possession of Exhibit 9 [RTX-006] in March '75 in Frankfurt. Can you say that specifically today that that is what happened?

A My declaration was already implying that it was at either of the three, which means that it is not specific at either one single of the three.

Q You cannot remember specifically that you got it in Frankfurt in March '75; correct?

A I have stated that on paper that it was at either of the three.

Q Well, I want a yes or no. You do not remember --

A You are trying to tell me to deviate from what I wrote.

Q No. I'm not trying to do that. I am trying to gain some hard facts. And I am asking you whether you have a specific recollection of having gained knowledge of this particular document, Exhibit 9, in Frankfurt in March '75.

A I do not recollect twelve and a half years later at which exhibition I collected that brochure of the three.

Q Why Dr. Borkent, do you mention Frankfurt and Gotenborg and Stavanger in this paper you are talking about?

A Because they were exhibitions where these products were being talked about and launched at the time.

Q Were there any other exhibitions in 1975 for this sort of product?

A Not that I recall that I specifically remember. The ISH Exhibition is an exhibition that stands out as the leading exhibition where Freudenberg in its home country is always present with the largest booth and the largest display.

Q We supplied to you certain documents from the Frankfurt Fair in response to Respondent's request for production of documents. And I suspect your counsel and your Dutch Agent, Mr. Eilbrecht may have the same thing, but in any event, we supplied it to you.

A I saw that this morning.

Q You saw it. I'll let you look at it again.

A I saw that in Holland.

Q Yes. Is that a catalogue of the March 1975 ISH FAir in Frankfurt?

A Yes, it is.

MR. FELFE: Let's get that marked as Exhibit 10.

(The document referred to was marked for identification as Borkent Exhibit No. 10).

BY MR. FELFE:

Q Now, Dr. Borkent, apart from the cover page there is, as you saw this morning, a page 559 that lists the location of the Frankfurt booth and the products displayed there. Since you speak German, would you give me that.

You have completed your review of the document?

A Yes.

Q Is there mention of any pocket filters in the catalogue of Freudenberg products exhibited at the Frankfurt Fair?

A At this specific one?

Q At this specific one, March 1975.

A The only one that I can recall that could have been there is the document that I have supplied which I am not sure whether I picked it up at this fair or at the two fairs in Scandinavia.

Q Dr. Borkent, please listen to my question. You have just looked at Exhibit 10. And I am asking you, since it is in German, and you speak German, is there any mention in the official catalogue of which the pertinent pages constitute Exhibit 10 of any pocket filter product of Freudenberg because all their goods are listed; right?

A No, they are not. The air filter, the filter (?) is air cleaners. And any air filter, whether it is a mat or a pocket filter is an air filter. And, if I may expand on that, above Freudenberg is listed two companies, three companies, (German Company) who makes air filter pockets, pocket filters. So their booth was filled with pocket filters.

Delbag GmbH Filters makes pocket filters and was exhibiting pocket filters. C.M.W. Detriebe is a company constructing pocket filters, all of synthetic fiber and nonwoven media. Gertsch is a company manufacturing pocket filters, even manufacturing pocket filters that are welded. At that time, they were a customer of Freudenberg.

Going down the list: LUWA is also a manufacturer of pocket filters and so is A. W. Schirp luftfilter who was purchasing material from us and making pocket filters and were exhibiting them.

(Borkent dep. CPX-2 at 102 to 106).

113. Borkent continued in deposition:

Q I am going to ask it once and would ask you to confine yourself to the question. I pointed you specifically to the Freudenberg exhibit and asked you whether the product exhibited are listed there. And I point you once again specifically to the bottom of page 559. Do you find a mention of a pocket filter product in that listing?

A It does not specifically say that in this listing. But there are five other companies that do not specify that either and that are all manufacturers of pocket filters on the same page, under the same heading and grouping.

Q But so what? Freudenberg, you say that you saw the Freudenberg pocket filter at a Frankfurt fair in March '75, this fair, Exhibit 10.

MR. KILE: That mischaracterizes his answer. He said he saw it at one of three. Several times.

MR MR. FELFE:

Q Do you want to withdraw your testimony that you saw it at Frankfurt?

205

A I did not say that I saw it at Frankfurt. I saw it at either of three exhibitions.

Q The fact is, Dr. Borkent, is that we have a record here. It is the official catalogue of the March 1975 ISH Exhibition in Frankfurt. Germans, being quite thorough, lists in detail the location of the booth.

A So does every other manufacture at the time.

Q Maybe the Scandinavians --

A They all do.

Q It's in Hall, looks like 6, Corridor C, Booth 6038.

A That's common in every exhibition.

Q It lists Karl Freudenberg, Viledon Works, and it lists at least six different types of products. My question is very simple. Are pocket air filters among those products listed for Freudenberg?

A In this list, no.

Q Thank you. And, furthermore, if your earlier testimony is correct, that the leaflets that carried what you say is a printing date did not in fact become available until that printing date or after, it was physically impossible to have a March printing being available and handed out in March. An April printing being available and handed out at a March fair; isn't that right? That would be quite impossible.

A I did not testify that it could only be at the ISH. It is too long ago that I would remember exactly which fair it was. And there were three fairs at that time.

Q I will make the question more specific. If Exhibit 9 was, in fact, produced only in April '75 or after, it would have been physically impossible for you to have received it in March 1975 at the Frankfurt ISH; right?

A You could think that, but it was not physically impossible that they were still exhibiting at that fair with another copy. But at least this one seems to be printed in April 1975.

Q So, with respect to this Exhibit 9, I am going with what you gave us. That's the reason I'm using this.

A Yes.

206

Q This is what you gave us. All you gave us with the exception of the later exhibits which have been marked. It is quite impossible for that exhibit to have been handed to you in March 1975 isn't that right? If it wasn't produced until April '75 or after.

A There is no way I can prove that things that were coded for '75 were not distributed in the last week of March.

Q Is there any way you can prove that things coded for '75 were distributed at any time?

A I was not at --

Q You said earlier that the ISH was sometimes in March, sometimes in April, depending how the weeks went; right?

A I do not recollect every single date of the last seven exhibitions.

Q And you said that when it was in the March, it was the last week in March?

A Usually is it always in that area of time. I would think that and this is just a wild guess. If Easter Sunday and Monday falls on the 28th or 29th of March, than [sic] the exhibition is not held in that weekend.

Q This was not, in fact, held in the last week of March. It was held between the 19th and the 23rd of March in 1975?

A Yes.

* * *

A Because I told you earlier, I had 15-20 or more copies of similar brochures and they varied in date of printing, and language that they were written in.

(Borkent CPX-2 at 106 to 109, 118, 119).

VII. Validity and Infringement

114. Carl J. Bauder was qualified as an expert for respondents in air filter construction and end design. (Tr. at 325, 326).

115. Bauder is currently employed by the Cambridge Filter Corporation of Syracuse, New York. Cambridge sells respondents' Filtrair products. Bauder developed two of the products which Cambridge currently sells: the Cambridge Hi-Cap and Hi-Flo filters. Bauder received a Mechanical Engineering degree in 1957 from the General Motors Institute of Technology in Flint, Michigan. (Bauder RTX-001 at 2, 3; Bauder Tr. at 236).

116. Richard D. Rivers was qualified as an expert for respondents on the design and development of general ventilation air filters. (Tr. at 382, 383).

117. Rivers began his career with American Air Filter Corporation as a physicist in 1949 and left American Air Filter in 1986 to help start Environmental Quality Sciences. He holds a B.A. degree from Haverford College and completed two years of graduate study including one year at Texas A & M University in physics and one year in chemical engineering at the University of Louisville. (Rivers RTX-002 at 1, 2).

118. Rivers believes he has more than ordinary skill in the art. (Rivers Tr. at 482). He first saw a filter like complainant's CPX-5 about a week before commencement of the hearing. He has had no direct experience with the Viledon filters of the type represented by RPTX-1 and CPX-5, However during Rivers' tenure in research at American Air Filter "we tested some Viledon filters". (Rivers Tr. at 535, 552, 553).

119. Dr. Werner Bergman was qualified as an expert for complainant in gas filtration and gas filters without objection by respondents. (Tr. at 751, 752). Bergman has been at Lawrence Livermnore National Laboratory in Livermore, Calif. since 1976. He is presently a project manager there. He has particular responsibility for developing and evaluating filters for the nuclear industry. Prior to going to Livermore, he had experience in the measurement of particulates at the Ford Motor Company and did research involving measuring particle size distribution at Wayne State University where he received a Ph.D. in physical chemistry. He has been actively involved in outside consulting work relating to gas filtration and has consulted for government agencies as well as major corporations. Bergman is the sole patentee on the following U.S. patents: U.S. 4,687,579 for "Sintered Composite Medium and Filter", U.S. 4,623,365 for "Recirculating Electric Air Filter," U.S. 4,581,046 for "Disk Filter", and U.S. 4,405,342 for "Electric Filter With Movable Belt Electrode". (Bergman CX-59 at 1, 2; CX-51; CX-52; CX-53; CX-54).

120. Bergman testified:

> Q Have you ever actually designed such a general ventilation filter equivalent to the Hi-Flo, the Cambridge Hi-Flo or the T-60?
>
> A Yes, many models.
>
> Q But none of them have been patented?
>
> A Let me qualify that, though. The university of California is not in a profit position. If they were to patent every one of my inventions, I would have a list of a hundred.
>
> Q So should I take from your answer then, that you've never designed a general ventilation filter that has actually been commercially sold?

A Correct.

(Bergman Tr. at 761, 762).

121. As to the level of ordinary skill in the art, respondents' Bauder testified:

> A person of average skill in the air filter art should possess several years of production and design experience, not-withstanding education. Someone with a formal technical education could claim ordinary skill more quickly, however, some practical experience would still be required. A person having ordinary skill would possess a general knowledge of the design and construction of most commercially marketed filters. He would be able to recognize the function of each constituent part of common air filters and identify equivalents to those parts.

The term "average skill" meant "ordinary skill" to Bauder. Also to Bauder "several years ... experience" meant three to five years experience working in the business concerned with engineering type or technical type experience. (RTX-001 at 8; Bauder Tr. at 322, 323, 324).

122. Respondents' Rivers testified:

> A person of average skill in the air filter art in 1975 would possess a related technical degree and have approximately two to four years of production and design experience. Someone with a graduate degree possessing a minimum level of practical experience would fall into this set. Also, someone without a technical degree could claim ordinary skill with say three to five years of production and design experience. The air filter business is neither labor nor capital intensive. This results in a great many "garage-shop" operations which are run by those possessing a minimum of technical training. The real key to a claim of ordinary skill is experience. Any meaningful level of hands-on experience will suffice. A person having ordinary skill would possess a general knowledge of the design and construction of most commercially marketed filters. He would be able to recognize the function of each constituent part of common air filters and identify equivalents to those parts.

(RTX-002 at 6, 7). Complainant's Bergman testified that one of ordinary skill in the art would have had several years of practical experience in filter design. He would be familiar with Cambridge Hi-Flo and Hi-Cap filters and with the Bauder patents directed to those filters and would have been familiar with American Air Filter's Dri-Pak filters and Rivers' '154 patent directed to the Dri-Pak filter. (Bergman CX-59 at 17, 18).

123. U.S. Pat. No. 3,190,059 (the '059 patent) titled "Pocket Filter" issued on June 22, 1965 to Carl J. Bauder and Charles G. Hart and is based on an application filed on May 3, 1962. (RTX-007).

124. The '059 patent discloses that its invention:

> is directed to a filter cartridge construction wherein the need for supporting grid work [as for example in the filter construction of Engle et al 2,907,407 and 2,907,408] is eliminated, and in which the extended areas of flexible filter media are arranged in a multiple pocket form, the pockets of which are partly sustained, during air flow, by the inflation effect resulting from differential pressure. When air flow is terminated, the multiple pockets of the filter, being flexible, tend to fold and can be folded out of the way, and thus do not obstruct any substantial length of air duct downstream of the supporting casing. Thus such air duct is accessible, and free of rigid grid work within the duct. The elimination of such grid work constitutes a saving in initial installation expense, and permits the use of air ducts, wherein the filter media is disposed, of a minimum length.
>
> More particularly, the filter cartridge of the invention is composed of a casing, in which are disposed and mounted the open ends of a plurality of like pockets vertically disposed, and arranged side by side, and in which each individual pocket comprises an elongated fold of filter media to form the vertical pocket. Further each such pocket is provided with a series of horizontally extending rows of filamentary stays of gradually decreasing length from the upstream end of the pocket, which stays serve to control the spacing between the flanks of each pocket, to prevent intercontact between adjacent flanks of adjacent pockets. Such stays further serve to assist each pocket,

211

when inflated from differential pressure, into assuming a symmetrical form about a vertical plane, with the adjacent flanks thereof lying substantially in planes converging downstream at the tip end of each pocket.

* * *

Each pocket ... may be formed of a single relatively long rectangular sheet of filter media, which may be folded ... to form two flanks .... The side edges of the flanks are stitched together or otherwise secured along the top and bottom edges ....

In order to achieve a pocket capable of satisfying the foregoing conditions, and capable of self support from the casing and airstream flow in symmetry about a vertical plane extending normal to the plane of the casing, each pocket is provided with a series of rows of filamentary stays extending between the pocket flanks, the rows of filamentary stays extending parallel to one another and substantially parallel with the upper and lower stitched edges 36 and 38, and at right angles to the end fold 30. Such rows are indicated in FIGURE 2 [reproduced below] at 40.

As shown in FIGURES 6 and 7, [reproduced below] each row of stays may in effect take the form of stitching, wherein the spacing between stitches is substantially uniform, but wherein each stitch comprises a portion which may be referred to as a stay, the length of which progressively decreases from stitch to stitch from the open end of the pocket to the downstream end thereof. In FIGURE 7, such stays are indicated by the reference characters 74 and 76, 78 and 80, and their length between flanks progressively decreases in approximately the manner shown.

The stitching employed to form such stays may be of the chain stitch type, as shown in FIGURE 6, wherein a single filament 90 extending along the outside of land 32 has a loop portion 94 extending along the outside of flank 32 and the flank 34 and though the loop end 94 of the preceding stitch, the loop portion 92 extending along the outside of flank 34, as at 96 to receive the loop portion 98 of the next stitch. The portion of the loop of each stitch extending between the spaced flanks 32 and 34 forms a stay which is adapted, together with the remaining stays, to provide a maximum spacing between the flanks of the filter pocket.

The rows of stays of uniform spacing and of gradually diminishing length coact with the flexible media to

* * *

> provide, when inflated by the differential pressure of the airstream, a series of outstanding pockets, separate from and spaced from each other. Each pocket has its flanks gradually converging in the direction of air flow, and the rate of flow within each pocket from inlet end to tip end is quite uniform by reason of the uniform escape of air through the media flanks.
>
> Thus the wedge shape of the pocket provides a corresponding decreasing cross section adequate to handle the air, which is gradually diminished by the air that has passed through the pocket flanks. While chain stitching for forming the stays has been referred to as an economical and desirable mode of constructing the pockets, any suitable form of stitching, as will produce the stays may be employed, the purpose of the stitching being merely to provide a means for forming rows of stays which will be effective when taut to cooperate with the flanks of the filter media in providing symmetrical support for the pockets, when inflated by differential pressure resulting from the air stream flowing through the media. In fact, while stitching is found to be a economical means for providing means to fix the spacing between the flanks in the converging manner described, instead of rows of stays, webbing, thin flexible sheet material, perforate or otherwise, in the form of long tapered fingers can be employed, the side edges being sewed or otherwise secured to the opposite flanks to provide the graduated converging spacing.

(RTX-007, col. 1, lines 25-57, col. 2, lines 33-38, col. 3, lines 32-63, col. 4, lines 49-75, col. 5, lines 1-3).

125. FIG. 2, 6 and 7 of the '059 patent are:

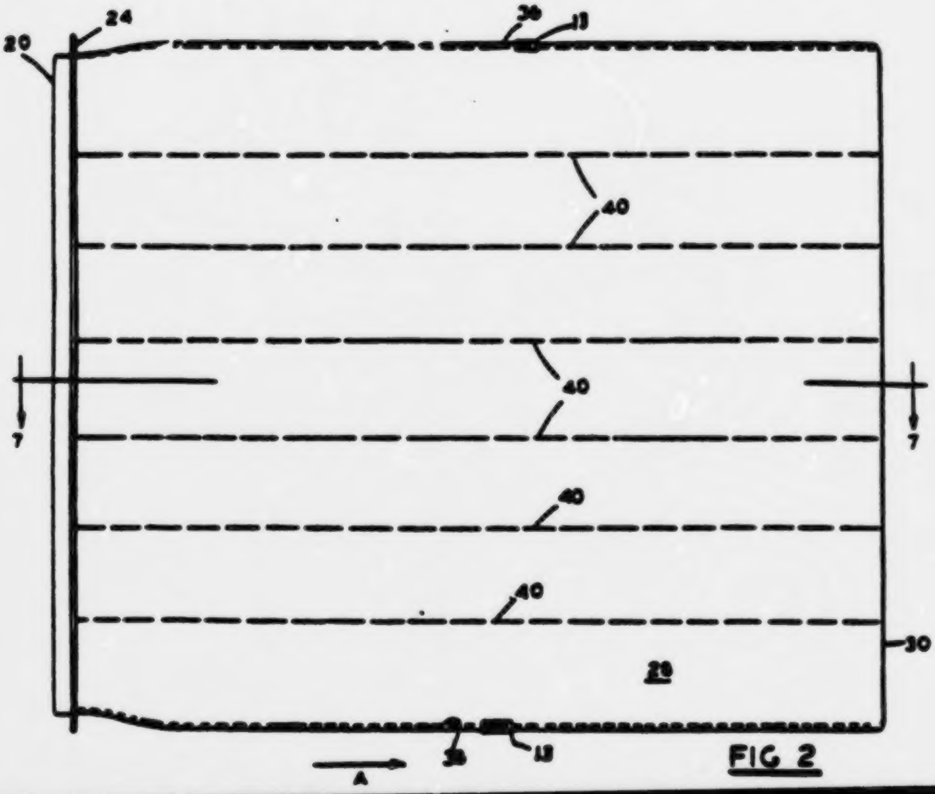


FIG 2

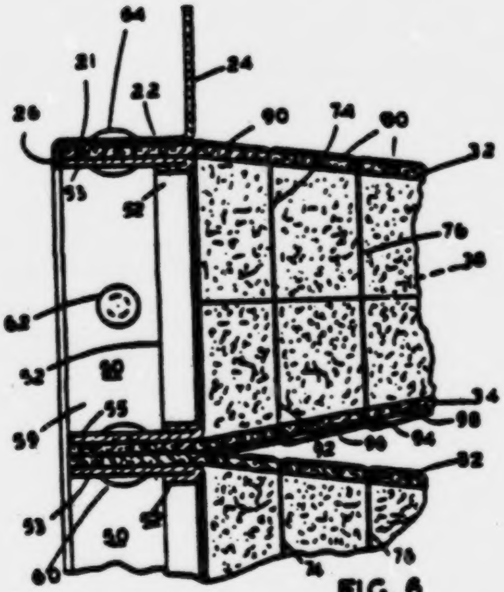

64
21
22
24
26
90
74
90
32
53
52
76
38
62
52
50
34
59
55
98
92
96
94
32
53
52
50
60
74
78

FIG. 6

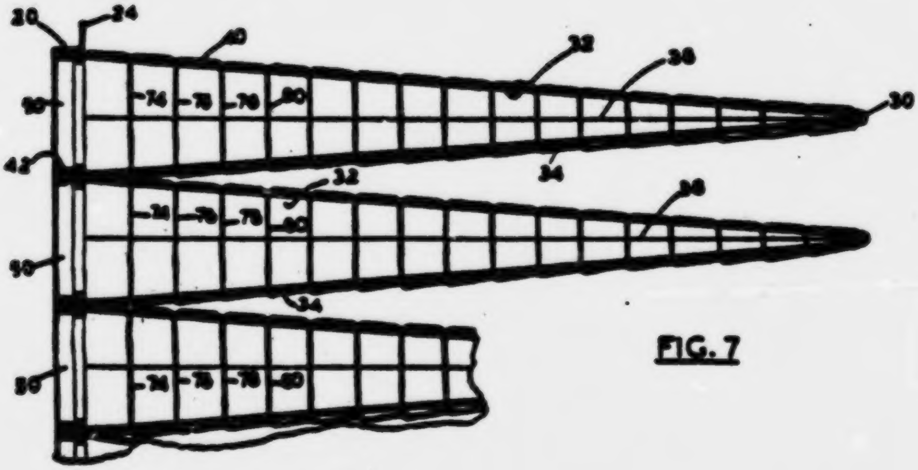

20
24
40
32
38
30
50
74
78
78
80
42
34
32
38
50
74
78
78
80
34
50
74
78
78
80

FIG. 7

BEST COPY AVAILABLE

214

126. The Bauder '059 patent teaches that "if desired" the upper edges of each of the pockets may be tied together with a flexible tape secured to the midpoint of the upper edge of each pocket. CPX-11(a) shows that not all Hi-Flo filters are made with such a tape. (RTX-007, col. 4, lines 43-46).

127. The '059 patent discloses --

> The filter media ... comprises a flexible mat ... of fine filtering filaments such as fine fiberglass. The exterior of the filter media is provided with a layer of coarse netting such as cheese cloth or open mesh fabric as is indicated at .... Since the stay portions of the stitches pierce the filter media, and tend to form small bypass apertures, a layer of adhesive sealant is applied to the exterior of both flanks of each pocket, along the stitch lines, and such adhesive serves to fix or lock the stitches, so that the thread cannot slide or shift, or unravel.

(RTX-007, col. 4, lines 8 to 18).

128. According to the '059 patent, with respect to the claimed pocket filter:

> It is desirable that each pocket be self supporting from the casing and differential pressure created by the air stream, and that when inflated each pocket assumes a symmetrical disposition about a vertical plane extending in a downstream direction from the casing.
>
> * * *
>
> The filter unit, as thus completed, is mounted in an air duct frame, with the casing lying in a vertical plane and the open ends of the pockets disposed vertically. In the absence of air flow creating differential pressure, the free ends of the filter pockets tend to fold over gently and depend downwardly. However, once such assembly is subjected to an airstream, and consequent differential pressure, the pockets in unison become inflated to the extent permitted by the stays, and all pockets become self-supporting in parallel arrangement, and each pocket becomes substantially symmetrical about a vertical central plane extending downstream perpendicularly from the plane of the casing. If desired the upper edges of each of the pockets may be tied together with a fiber flexible tape ...

215

> secured to the approximate midpoint of the upper edge of each pocket. Such a tape serves as an assist from pocket to pocket for group action when air flow commences to inflate and extend the pockets.

(RTX-007 col. 3, lines 14-22, col. 4, lines 32-48).

129. Each of respondents' Bauder and Rivers testified that as to the Hi-Flo filter disclosed in the '059 patent

> These spacing elements [filamentary stays of the Hi-Flo filter] are attached to the opposite inclined wedge faces whereby the filter pocket is rendered self-supporting by the attachment of the pocket halves to one another, and the attachment of the spacing element to the pocket.

(Bauder RTX-001 at 9, Rivers RTX-002 at 8).

130. Rivers testified that the term "self-supporting" with respect to the Hi-Flo patent meant that a backup wire grid is not needed in the filter. (Rivers Tr. at 537).

131. The end use application of the Hi-Flo filter usually is intended for filtration of ventilation. The Hi-Flo filter is generally known as a high efficiency filter. The Hi-Flo filter is made in a variety of efficiencies. Efficiency relates to the ability of the product to remove airborne particulates that ranges from less than 20 to more than 99.99999 percent particulates in the air. RTX-12d relates to a Hi-Flo filter. (Bauder Tr. at 238, 239, 240).

132. CPX-11 is a Hi-Flo filter. CPX-11(a) is another Hi-Flo filter. Bauder has had extensive experience in the actual operation of the Hi-Flo filter. (Bauder Tr. at 249, 250, 272).

133. As shown by CPX-11(a), the pockets of the Cambridge Hi-Flo filter may be made of stitched, wedge-shaped sections.

216

134. According to Bauder, the Hi-Flo filter was developed from experience gained during the late 1950s from the Cambridge Rigid Aerosolve and folding Aerosolve filters which filters were pleated type filters and were designed to fit into a wire frame. Bauder testified that those filters, although fairly successful, had problems due to cost and cumbersomeness; and that the required wire frame was intricate and mating replacement filters into the frame was cumbersome and tedious. (Bauder RTX-01 at 4).

135. According to Bauder the prime objective in a design criteria of the '059 patent was to eliminate the need for a wire support; that the wire support had been essential in filters to guard against billowing; that without any support, the flexible pockets billow out when in use and lose their wedge shape; that the loss of the wedge shape has the practical effect of reducing the useful filter surface and increasing the pressure drop across the filter because once the pocket billows, most of the air flows through the back of the filter with the sides rendered useless as they become parallel to the air flow and abut against the neighboring pocket; and that as the reduced effective filter surface now filters a commensurately larger share of contaminants, the filter is then spent sooner. The concept of using filamentary stays to ensure pleat integrity was formulated which provided the ability to fold the filter into a relatively small package for storage while retaining the features of the wire supported version and which was said to reduce the cost of the filter considerably. Bauder testified that he worked on this project with Charles Hart, and they obtained U.S. Patent 3,190,059 (the '059 patent) on the Hi-Flo filter. (Bauder RTX-001 at 4, 5).

136. Bauder testified that the filter of the '059 patent used threads of gradually decreasing length as "we moved back from the filter opening"; that by putting in several rows of these spacers across each pocket the billowing was eliminated; that threads were chosen because they were cheap and easy to install; that the threads were simply sewed in using a decreasing stitch sewing machine; and that Continental and other manufactures use plastic swifts. (Bauder RTX-001 at 5).

137. As a general rule if one wanted to get the same efficiency but have a lower pressure drop across the whole filter one would need a deeper (longer) filter as pictured in RTX-12d. (Bauder Tr. at 258, 259).

138. Fiberglass media is used in making all of the models in the Hi-Flo line. CPX-11 and CPX-11A have filamentary stays inside the pockets to keep the pleats from billowing out. The filamentary stays do not prevent the filter pocket faces from collapsing and when asked whether they stiffen the faces of the pockets, Bauder answered "No". (Bauder Tr. at 258, 259; Bauder RTX-001 at 3).

139. The '059 patent covers the Hi-Flo filters. (Bauder Tr. at 263; RTX-007).

140. The Hi-Flo filter as described in Cambridge's trade literature and the '059 patent being made of fiberglass could not be welded and thus was sewn together. If fiberglass is subjected to welding it simply becomes brittle and non-functional. The fiberglass was therefore sewn, a procedure which if used on non-wovens, results in disadvantageous needle holes. (Bergman CX-59 at 19).

141. The Hi-Flo filter has spacers which are filamentary stays that have a fixed length. As the filter pocket expands with the air flow, the

218

media is abruptly restrained by the spacer and may cause tearing. In contrast to the Hi-Flo filter, the '375 patent teaches the use of a pyramidal spacer that does not have fixed distances for the pocket separation and can accommodate abrupt changes in air flow without causing the media to tear. (Bergman CX-59 at 20, 21).

142. Generally a characteristic of Hi-Flo filters is that in the absence of air flow creating differential pressure, as taught in the '059 patent, the free ends of the filter pockets tend to fold over gently and depend downwardly as stated at col. 4, line 34, col. 5, line 27 of the '059 patent. (Bauder Tr. at 264, 265).

143. A Cambridge Bulletin 136 titled "Variable Air Volume Hi-Flo High Efficiency Air Filters for VAV Systems" with a copyright date of 1978 states in part on the front page:

> THE VAV HI-FLO WILL NOT SAG ... EVEN UNDER NO-FLOW CONDITIONS
>
> * * *
>
> The VAV Hi-Flo maintains its form without filter support bars even under low-flow or no-flow conditions. This unique advantage means effective media area and full filtration capabilities are utilized no matter how conditions in the system vary. Other long, extended surface area filers not only sag, but pleats can bunch together, restricting air passage, increasing resistance and requiring more frequent changing. The VAV Hi-Flo eliminates these problems.

and on the back page:

> Controlled Media Spacing is a Cambridge feature by whi a variable length stitch is used to mark the pleats. the tapered configuration provides uniform air velocity for uniform dust loading and lower resistance. This construction also gives the filter strength and performance rigidity for long life and no filter sag.

(CX-74).

Commenting on the above, Bauder testified:

Q Now Mr. Bauder, I ask you again, is it a problem when filters sag?

A No.

Q Well, how do you square that with this exhibit [CX-74]?

A Some of our customers want to have a filter that doesn't sag, or fold over or collapse.

Q And they do that because they find that aesthetically displeasing or why?

A I can't answer you. I don't know why they want that. They do not want a filter that collapses.

Q Mr. Bauder, doesn't it stand to reason that they wanted -- they want a non-sag filer, and you say that's not because of any problems they've encountered with sagging filters? That's your testimony?

A I'm saying there is no problem with sagging filters.

Q But your own Cambridge brochure states the VAV Hi-Flo eliminates these problems. And the problems are, as I just read, pleats can bunch together restricting air passage, increasing resistance, and requiring more frequent changing. None of this is true?

A Not with the Hi-Flo filter.

Q But this brochure is a Hi-Flo, CX-74. You're saying all this is not true.

A No, I'm not saying that.

* * *

THE WITNESS: Yes, the Hi-Flo filter maintains its openness and its availability to air flow by virtue of the inflation of the pleat when the fans are operating.

Some bag-type filters do not become erect during operation. Some bag-type filters become entangled when air flow is turned off and the pleats collapse.

To avoid that problem, some customers have specified a non-folding filter, or a non-collapsing, non-inflating, if you will, filter.

220

The VAV model is made 25 inches deep as opposed to 36 inches deep or 37 inches deep, which is a common size in a filter like this, because that depth allows the filter pleats to remain erect whether the fan is on or off.

So some bag-type filters have had problems because of inflating and deflating operations. That's not true with the Hi-Flo.

* * *

Q It's important, isn't it, Mr. Bauder, that in operation of the filter that you don't obstruct the air flow downstream of the supporting frame of the filter?

A I don't think I understand your question.

How far downstream, or what do you mean by downstream?

Q Well, let me refer you to your '059 patent.

* * *

Q And at column 1, line 33, there's a reference that it's important that the high flow filters are capable of being folded out of the way, isn't it?

A Yes.

Q What is the importance of that?

A Well, it allows the filter to be installed in the same space that is required to service the filter, so that when the plates are not erect, the space that they occupy when they are erect is available for a maintenance person to service the filter bank.

Q So you say in your patent, you say, it's an advantage of the Hi-Flo that it is flexible, folds, and can be pushed out of the way so you can examine the air duct, is that right?

A So's you can get into that space, right.

Q Mr. Bauder, you told us that when the airflow is cut off going through a filter, there is sagging. What happen if you have changes in airflow, slighter changes in airflow. Does anything happen within the filter?

A Well, if the airflow went up, the pressure drop of the filter would go up, and the opposite is true.

Q It will go down if you reduce?

A Right.

(Bauder Tr. at 269 to 274; CX-74).

144. With respect to Hi-Flo filters CPX-11 and CPX-11(a) filters and fluttering, Bauder testified:

Q Well, these models that you see here, CPX-11, 11(a).

A Okay.

Q Air comes in, hits the sides of the pocket. What happens?

A If the filter had been pushed aside as we said a moment ago, --

Q Pardon?

A If the filter pleats had been pushed aside by a service man or something like that and remained in that position when they started the fan up, the pleats would become erect and the flanks of each pocket would separate to the limit that the stays allow.

Q So the faces spread apart and are prevented from billowing too much by the filamentary stays, right?

A Right.

Q How many times can that happen in the normal life of a filter?

A Well, in normal service, they could be turned on and off every day.

Q Once a day?

A It's possible.

Q When the air flow is reduced, you have those situations, don't you, in operation of the filter?

A Yes.

Q Then the filter pocket faces tend to come together, do they not?

A Depending on the efficiency and size of the filter, yes.

Q And when that happens, there is less tension on the filamentary stays, right?

A Correct.

Q So they really serve no function at that point when the faces are close enough together that the stays are not fully extended, then they just hang there?

A Right. When the filaments are not in tension, they don't serve much function.

Q Right.

Now, when you have this back and forth movement of the filter pocket faces toward and away from each other, that is caused by changes in air velocity, right?

A Yes.

Q All right. Mr. Bauder, do you encounter turbulence when air goes through filters in normal operation?

A Not in a normal sense of the word.

Q When you have changes in air speed, do you encounter turbulence?

A Again, not in the normal sense of the word.

Q Well, in what sense of the word?

A Well, turbulent flow is a specific type of air flow condition as opposed to laminar flow. But most people think of turbulent flow as a very strongly buffeting and violent multidirectional flow of air.

Q Well, isn't there a concept of turbulence that is well known to those in the filter art? Haven't you ever heard of turbulence in that context?

A That's what I just described.

Q Do you do have turbulence. Would you describe it again? I thought you were describing turbulence in another context.

A It's a non-laminar flow.

223

Q So you have turbulence in the normal operation of an air filter unit?

A In that technical sense, that's true.

Q Does that lead to fluttering?

A Depends on the magnitude of the turbulence.

Q It can lead to fluttering, right?

A Yes, if it's strong enough.

Q What is fluttering?

A The motion of an object. In this case, the motion of the pleat imparted by air flow.

Q All right. So you can have fluttering and that involves motion of the sides of the pocket towards and away from each other?

A Yes. I think that most of the fluttering that we talk about in the trade is movement of the ends of the pleats back and forth or up and down, as opposed to the movement of the sides of the filters.

Q But it can also include the faces moving toward and away from each other?

A It could.

Q That's also an aspect of fluttering, right?

A It could.

Q And can that not lead to a tearing problem when you use the filamentary stays that you use in your HI-FLO products?

A Can the fluttering lead to?

Q Tearing?

A Tearing.

Q Weakening of where the filamentary stays are attached, opening of the holes?

A It could.

Q And it could lead to opening of the holes where the stitches are?

A Not any more than any place else.

Q And when you have weaknesses and openings like that, Mr. Bauder, the filter becomes less efficient, right?

A If that happened, the filter would become less efficient.

Q Yes.

Does this fluttering effect happen millions of times over the normal life of a filter? Can it happen millions of times over the life of a filter?

A I suppose it could.

Q In your statement, Mr. Bauder, you say that you developed the Hi-Flo with the filamentary stays to oversome the wire frame that was required for the prior Cambridge product, the so-called Cambridge Rigid Aerosol. Is that correct?

* * *

Q And so you felt if was important and an advantage to do away with the wire frame characteristic of the prior aerosol product, right?

A That was the objective.

Q And then you developed the Hi-Cap, did you not, some time after you developed the Hi-Flo?

A Correct.

(Bauder Tr. 274 to 278).

145. In CPX-11(a) a bead of hot melt adhesive is on the back side of the pocket to anchor the threads to the backing materia. In sewing, holes are made in the pocket. Those holes are covered with hot adhesive. (Bauder Tr. at 262, 263).

146. A Hi-Cap filter developed and first marketed by Cambridge during the 1960s employed welded sides. The Hi-Cap filter, which was

developed at Cambridge by Charles Hart, Douglas R. Clemenshaw and Bauder, was the subject of U.S. patents U.S. 3,273, 321 (the '321 patent) and 3,485,694 (the '694 patent). The '694 patent, which issued on December 23, 1969 and is titled "Method For Using High Frequency Heat To Make A Seam In A Filter", is based on an application filed April 8, 1986 that was a division of the application for the '321 patent. The Hi-Cap filter is a synthetic non-woven pocket filter which consists of single and double layered media that is formed into pockets using heat sealing at the edges. (Bauder RTX-001 at 6, Bauder Tr. at 240; RTX-008; RTX-009).

147. The '321 patent titled "Air Filter Having A Replaceable Cartridge" issued Sept. 20, 1966 and was filed for on Aug. 26, 1963 by Carl J. Bauder, Charles G. Hart and Douglas R. Clemenshaw. It discloses that --

> In central air conditioning and air heating systems as have been installed for domestic or office building use, replaceable panel type filters have been employed. Such panel type filters are supported in rectangular flanged frames, and the number of such filters may vary from one to any number arranged in bank form, each panel type filter being supported in a frame, the frame, or bank of frames being disposed in an air duct through which flow of air is induced by a blower. The panel type filter units require replacement at intervals, the frequency of which depends upon the amount of contamination in the air. By reason of the square or rectangular nature of the panel type filter units, the flow area through the unit is restricted. The depth of the filter media is such that resistance to flow is initially relatively high, and increases considerably as the units become contaminated.

(RTX-008, col. 1, lines 13 to 28).

148. The invention of the '321 patent is directed to a filter unit adapted to installations of the type referred to in the previous finding wherein the area of the filter media for each unit is considerably extended by employing a pleated formation, and wherein the thickness of the media is

considerably reduced, so that the efficiency is greatly increased, in regard to resistance to air flow. It is said that due to the extended area afforded by the pleated formation, the dust holding capacity is greatly increased, and the frequency of replacement is reduced. The filter unit is said to comprise a low cost frame which may be installed in single units or in banks. Each unit has a filter media support grid readily attached to the down stream side of the frame. The filter media cartridge, composed entirely of filter media, is conveniently installed in the frame, and is readily replaced. Convenient sealing rods, hinged to each side of the frame, engage the marginal edges of the cartridge. The invention further contemplates the conversion of the frame installations adapted for panel type filters, so that the frames thereof will accommodate filter cartridges of the invention. (RTX-008 col. 1, lines 30-48).

149. The '321 patent discloses:

> In forming the filter cartridges, the two layers of filter media of acrylic fiber, suitably modified, may be drawn from supplies which may be in roll form. The layer which ultimately forms the upstream layer ... of the cartridge may be composed of coarser fibers and has less density than the other layer. The superimposed layers, as drawn from the supply will preferably be of a suitable width, not less than the height of the filter cartridge ... As the superimposed layers are drawn from the supply rolls, a suitable length of the superimposed layers of media sufficient to form one pleat, or one pocket, is folded ... over the edge ... of a flat thin pleater board ... of insulating material such as Bakelite, to form one pleat that ultimately will become a pocket with the fold ... becoming a downstream fold ... The length of media is folded flat over both sides of the board, the board having a width ... substantially less than the width of the media ... and the height of the pockets to be formed ... While thus folded over the board, the opposite flanks of the folded media are highly compressed between long narrow aligned upper and lower high frequency electrodes, which are briefly energized to provide dielectric heating of the acrylic fibers to thereby fuse the four layers together along the narrow strips ... which become the side seams of

227

> the pocket and thus close the side edges to form the pocket.
>
> The electrodes applied to the opposite sides of the media to fuse the side edges will conform substantially in contour to the two narrow strips of fusion ... and the thickness of the four layers, along the lines of fusion will be fused to a thickness of about 10 to 15 thousandths of an inch.
>
> Since it is desirable to secure the two thicknesses of media together at spaced points intermediate the side edges, such as along narrow strips ... to prevent the two layers from separating unduly or to provide stiffeners, provision is made for fusing the acrylic fibers, along lines ... through the use of further electrodes and the application of pressure and high frequency current thereto which may be effected simulataneously with the formation of the side seams. For this purpose, the pleating board is provided with elongated slotted openings, ... where such narrow strips or ribs of fusion are to be formed. Each of the slotted openings are loosely covered or bridged by a thin flexible sheet ... of Teflon of about three thousandths of an inch thickness. During the fusion process the Teflon does not fuse within the brief time cycle necessary to effect fusion of the media. The Teflon thus prevents the two layers of one flank of the pocket from being fused to the two layers of media forming the other flank of the pocket, while permitting the fusion of the two layers of each flank in a single operation. As in forming the side seams, upper and lower electrodes, are brought to bear under heavy pressure upon the four thicknesses of media and the intervening thin Teflon separator, and fusion of the compacted fibers is effected, to tie the two layers of each flank of the pleat together, along the narrow strips or ribs ... The thicknesses of the two layers of media where so fused is reduced to about 5 to 10 thousandths of an inch. The high frequency current is simultaneously applied to all of the electrodes to produce the side seams and the narrow strips ... of one fold or pocket in a single operation. (RTX-008, col. 5, lines 22-75, col. 6, lines 1-12).

150. Claim 1 of the '321 patent discloses that the pleat supporting wire grid, which is secured to an inwardly extending flange extending around the downstream side of a rectangular frame, has a rectangular wire frame affixed to the downstream side of said flange and a plurality of wires lying

228

in uniformly spaced vertical planes secured to the upper and lower sides of said wire frame. According to claim 1, the wires having central portions thereof offset upstream into the frame, and the wires lie in generally horizontal planes affixed to the side portions of the wire frame with the pocket forming wires having downstream extending loop portions between the adjacent offset wires and the frame side portions, and upstream portions bent over the offset central portions of said offset wires. (RTX-008, col. 8 at lines 5 to 12).

151. The Hi-Cap filter is made of non-woven synthetics and uses a 2-layer construction. Welding is employed for the purpose of joining the two layers of media in the Hi-Cap filter, as described in the '694 patent and only secondarily for some stiffening of the pocket sides. To achieve rigidity, the Hi-Cap filter uses wire frame supports as did the earlier Aerosolve filters. The use of those wire supports results in undersireable mechanical filter support constructions. (Bergman CX-59 at 6).

152. Bauder testified that the Hi-Cap filter has a relatively small number of large pockets; that the larger pockets facilitate mating the filter into the frame, and so the Hi-Cap filter was designed as a replacement cartridge which could be inserted into a permanent frame; that costs were reduced because one frame could be re-used many times and the additional manufacturing steps necessary to construct stays were eliminated; and that in the Hi-Cap filter in addition to using welding to join the wedge edges, welded bars intermediately across the filter extending back from the opening were used. The bar welds were said to serve two functions; first, to ensure that the two layers of media would not separate and billow apart; and second, to

tend to make the wedges more self-supporting. Since 1963, the Hi-Flo and Hi-Cap filters have been produced side by side at Cambridge's production facilities in Syracuse. (Bauder RTX-001 at 6, 7).

153. RTX-012mm describes the Hi-Cap filter. CX-73 is an original Hi-Cap Cambridge Bulletin 1505 brochure. The filter picture on the front page of both RTX-12mm and CX-73 are the same and show a 15-inch deep Hi Cap filter. Also the photograph on page 2 of RTX-12mm corresponds to that on page 2 of CX-73. CX-73 has a copyright date of 1963. (Bauder Tr. at 241, 244, 246, 279; CX-73).

154. The Hi-Cap filter on the front page of CX-73 has a metal holding frame and attached to it are wires used as a supporting grid structure. The wires provide support to the pleated media. (Bauder Tr. at 283).

155. One could say that when the Hi-Cap was developed, it was a throw back to the rigid aerosol in the sense that it required a supporting wire grid but yet Bauder feels that the Hi-Cap filter constitutes an invention over the rigid aerosols. (Bauder Tr. at 284).

156. CX-71 is a two page document. The first page of CX-71 has a reference to "FARR" and illustrates an air filer. (CX-71).

157. CX-71 shows a filter that is similar to a rigid aerosol. (Bauder Tr. at 288).

158. There is no teaching in the '321 and '694 patents that suggests that one can do without the wire support that is shown in CX-73 and yet have a working filter. There is also no disclosure in the patents of stays or spacers within the filter pockets. (Bauder Tr. at 290, 292; RTX-008; RTX-009).

159. The Hi-Cap filter involves a wire structure into which replaceable filter pockets are placed. (Rivers Tr. at 461).

160. CPX-9 is a kind of wire structure under which a replacement media cartridge (filter pocket) would be placed. (Rivers Tr. at 461).

161. The type of structure shown in CPX-9 is exemplified in Continental brochure CX-78. (Rivers Tr. at 471).

162. As to CPX-9 and CPX-9a, Bergman testified:

> THE WITNESS: Your Honor, if I might say a word. I had assumed I had in my possession a Hi-Cap. There are so many. I have two transportainer filled of similar type of filters. I assumed I had one of these available, I did not have the exact Cambridge "Hi-Cap" filter in my possession.
>
> I brought with me what experts in the field would deem equivalent to that product.
>
> JUDGE LUCKERN: What you are saying is that it is a fact that CPX-9 is not a Hi-Cap filter?
>
> THE WITNESS: Correct.
>
> * * *
>
> THE WITNESS: Before I had a chance to add the second phrase on that, I was going to add that the frame [CPX-9] plus the orange swab around the corner [CPX-9a] which is an insert for a wire frame type of holder, that represents the equivalent Hi-Cap.
>
> I don't mean to infer that wire frame is a filter. I was unable, maybe I should be more fast in the next proceedings. But I didn't want to convey that wire cage is a filter in any means.

(Bergman Tr. at 754, 755, 759).

163. CPX-9(a) shows the edge sides of the nonwoven pockets to be sewn and not welded.

164. The '694 patent teaches that the disclosed filter pockets are formed by folding the filter media and fastening the sides together by stitching, heat fusion or gluing. There is no discussion of the fastening

method providing a stiffening means thereby making a self supporting filter pocket which Bergman testified is not surprising since the filter element was not designed to be self supporting and, in fact, requires a wire supporting structure. (Bergman CX-5 at 6).

165. Bergman testified that the only discussion in the '694 patent that deals with stiffening the filter pockets is found in connection with a means for preventing the separation of the two thickness of filter media; that the '694 patent describes stitching, gluing and heat fusion as possible fastening methods; that the lack of any discussion of stiffening means, when describing filter pockets made from single layers of media, makes clear that Bauder's stitching, gluing and heat fusion are a fastening means and not a strengthening means; and that in analyzing the attributes of the filter element, the Hi-Cap filter is not self-supporting and, in fact, requires a rigid wire frame for support. (Bergman CX-59 at 6, 7).

166. The '694 patent states:

> [S]eams may be formed by stitching. Where plastic heat fusible material is employed such as media composed of acrilic [sic] fibers, the seam may be heat fused. On the other hand the seams may be formed by use of a suitable adhesive.
>
> To prevent undue separation of the two thicknesses of media at strategic points, or to provide a stiffening effect, the two thicknesses may be tightly stitched or adhesively secured together along lines ..., and if the material be of plastic, the two layers may be compressed and heat fused along the lines ... to attain the same effect.

(RTX-009, col. 5 at lines 33 to 44).

167. The '694 patent discloses that fused ribs provide stiffening of the filter media thereby reducing to a minimum the number of such wires required to adequately support the cartridge for effective filter operation.

(RTX-009, col. 7, lines 39-42). Bergman testified that hence any welded bars cannot eliminate the need for the wire supports; and that this is in contrast to the '375 patent where the method of welding or fusing of a separator and the sides of the filter pockets provides a strengthening means that together with the fusion of the wedge edge and the edge faces eliminate the need for external supports in order for the filter to be self-supporting and maintain rigidity. (Bergman CX-59 at 7, 8).

168. Eliminating the need for complex wire supports and the replacement operation taught in the Bauder '321 patent at col. 4, line 10, and the Bauder '694 patent at col. 4, line 30 would be desirable to reduce the total cost that consist of the purchase price plus the user's maintenance cost. (Bergman CX-59 at 8).

169. Since 1963, the Hi-Flo and Hi-Cap filters have been produced side by side at Cambridge's production facilities in Syracuse, New York. (Bauder RTX-001 at 7).

170. Integral separators are not employed and not taught in the Hi-Cap '321 and '694 patents. (Bergman CX-59 at 9).

171. In the '375 filter there is the continuous welding of filter pocket halves together at the wedge edges to form a U-shaped continuous and stiffening welding seam and centrally along the opposite wedge end faces. The '375 patent teaches that separate sheets are welded together at the wedge edge. The welds on the three sides of the filter pocket, as shown in the '375 patent, are made in such a fashion that they not only serve to fasten the media halves together to form a filter pocket, but also serve as a critical structural element of the filter to give it strength and rigidity. (Bergman CX-59 at 10, 11).

172. The pyramidal spacer in the '375 patent (claim 6), which is a prominant feature of CPX-1 (the alleged infringing respondents' filter) serves several functions:

(1) The spacer becomes rigid as air flows through it and resists any movement by the pocket sides. The fact that the inflated spacer can move and be distorted under fluctuating air flows and filter media movements, serves to dampen any fluctuations and thereby prevent filter flutter and pocket movements;

(2) The pyramidal spacer can withstand both tension and compression. Since the pyramidal spacer is effectively an inflated "sock" within the filter pocket and is attached to the sides of the filter wedge, it can both pull the sides of the filter pocket together by tension when the filter pocket tends to billow out. Conversely, when the sides of the filter pocket tend to collapse together, as for example, in fluttering, the spacer will tend to push the sides of the pocket out by compression;

(3) The pyramidal spacer design is significantly improved over previous spacer designs, as for example, the stays in the Hi-Flo filter, because the pyramidal spacer will not tend to damage the filter media under high air flows or monentary air pluses when starting the air flow. The inflation of filter pockets having fixed length spacer elements as in the Hi-Flo filter will cause the strings or other fastening means to pull sharply against the filter media, thereby causing damage to he media. In contrast, the pyramidal spacer does not have fixed separation distance, but can expand or contract as needed to accommodate fluctuations in the air flow;

(4) The final function of the pyramidal spacer is said to provide a means for strengthening the filter pockets by means of the stiffening property of the fusion between the spacer and the sides of the filter pocket. The fusion serves not only to connect the spacer to the side pocket but also to provide structural strength. (Bergman CX-59 at 12 to 13).

173. In a typical unit, according to the '321 patent, the frames are usually square or somewhat rectangular and one standard size may be approximately 24 inches square. (RTX-008, col. 2, lines 54 to 56).

174. The Hi-Cap filter relative to the Hi-Flo filter is a relatively low efficiency filter, i.e. it has a lower ability of removing air borne dust particles. The Hi-Flo products illustrated in the '059 patent (RTX-007) shows no wire supports and Bauder in that patent was trying to get away from the wire supports. The Hi-Cap filter always has a back-up wire grid. (Bauder Tr. at 291, 292, Rivers Tr. at 537).

175. Bauder testified:

> Q And you wrote the Hi-Cap patent after you wrote the Hi-Flo patent?
>
> A Correct.
>
> Q And it never even occurred to you to put the disclosure of spacers or stays in the Hi-Cap patent, right?
>
> A They aren't he same product.
>
> Q Exactly. That's my point.
>
> And you were happy with the Hi-Flo filter for many years, right?
>
> A Yes sir.
>
> Q Still happy with it today?
>
> A Yes, sir.

Q You're happy with the Hi-Cap product?

A Yes, sir.

Q Have been for many years?

A Yes, sir.

(Bauder Tr. at 292, 293).

176. As to effect of depth, Bauder testified:

> Q Mr. Bauder, you earlier testified that the Hi-Flo's did not have any problems due to the air either being turned on and off because they didn't have any -- when the air came on, they'd be self-supporting by the air resistance. Isn't that correct?
>
> A Yes.
>
> Q With respect to the filer depicted in CX-74, which is 25 inches in depth, would you say one of the reasons that that remained upright when the air was turned off was because of the depth?
>
> A Yes.
>
> Q So what would occur with respect to the Hi-Flo filters which are either 36 inches in depth or 37 inches in depth once the air is turned off?
>
> A The deeper the filter, the greater tendency for the filter to collapse or fold over.

(Bauder Tr. at 303)

177. In the Hi-Flo filter, the filamentary stays keep the sides from billowing out but do not prevent pockets from collapsing towards each other. (Bauder Tr. at 304).

178. While Bauder testified that the Cambridge Rigid Aerosolve and folding Aerosolve filters were pleated type filters designed to fit into a wire frame, and that those filters had problems due to cost and cumbersomeness, that the "[filamentary stay] spacer concept also reduced the cost of the filter considerly" and "We chose threads as our spacers because

236

they were cheap and easy to install" and hence that the Hi-Flo was developed without the wire frame and with filamentary stays he also testified that "We chose to construct the Hi-Cap without integral separators in favor of a single wire frame to reduce replacement costs" "[b]ecause the Hi-Cap has a relatively small number of large pockets, its wire frame does not require the complexity of previous filters". (Bauder CX-001 at 4, 5, 6).

179. Nutting U.S. Pat. No. 3,386,231 issued on June 4, 1968 on an application filed on December 23, 1966. The patent is titled "Pocket-Type Filter". (RTX-012h).

180. The Nutting '231 patent provides a pocket-type fluid filter comprising a substantially rigid, self-supporting filtering material molded to provide a unitary filter including a plurality of longitudinally extending, side be side filter pockets. The filter pockets include an open ended upstream mouth position, a tube shaped body portion and a closed downstream end portion. The mouth portions of the filter pockets have a common integral supporting portion member surrounding and extending transversely therefrom to support the filter pockets in preselected position in a fluid stream to be filtered. (RTX-012h, col. 1, lines 54 to 65).

181. French Patent No. 2,201,111 has a publication date of April 26, 1974. It relates to filter bags with channels for filtering devices. To resist the stress created by the lateral tension of the channels which tension is due to the pressure exerted by the gas to be filtered, each of the vertical edges of the filter bag may include a rigid lateral member consisting of a tubular element. The diameter of this tubular element permits even distribution of the stress created by the lateral tension of the channels. (RTX-012 kk at 1, 4).

182. An extended media filter cartridge was originally developed during World War II using paper pleated over corrugated spacers. These filters had limited commercial success due to their unitary construction and once the filter was spent the entire device was discarded. The next generation of filters employed an intricate wire frame upon which a replaceable filter cartridge was mounted. These devices allowed for reusing of the frame but had practical difficulties. Because of the large number and small size of the filter pleats, the wire frame was intricate and delicate. Insertion of a new filter into the frame was a difficult and tedious task requiring many man-hours. At American Air Filter it was sought to solve this problem by developing extended media filters without any frame at all. These ideas were eventually embodied in what is known as the Dri-Pak filter. The Dri-Pak filter was originally designed as a series of tube-like pockets of filter media mounted on a baffle like header. The tubes were constructed of two pieces of filter media which was sewn or stapled at the edges to form the tubes. The Dri Pak filter was readily collapsible for shipping and storage and yet provided a full measure of useful filter surface. It required no external frame and installation was easy. Rivers obtained U.S. Patent 2,853,154 (the '154 patent) on an early version of this design. (Rivers RTX-002 at 4, 5).

183. The '154 patent issued on September 23, 1958 in an application filed on August 27, 1956 and is titled "Pocket-Type Air Filters". (RTX-011).

184. The invention of the '154 patent is in a unit comprising an opposed pair of plain or corrugated cardboard plates having aligned pocket-receiving apertures, a porous air filtering pocket for each aligned

pair of apertures, each pocket projecting through an aperture in one plate from a perimetric mouth flange which extends between plates, and means securing said plates together to provide a frame which grips said flanges and supports said pockets, and integrates said frame and pockets into a unit which is disposable as a whole. (RTX-011, col. 1, lines 42 to 51).

185. At American Air Filter fiberglass was originally chosen as the filtration media because of its filtration qualities and the lack of acceptable alternatives. Some work was done with non-wovens at the inception of the Dri-Pak program but it was found that supplies of nonwovens of the required dernier (fiber diameter) were expensive. As the Dri-Pak program progressed, alternate designs were began. A later generation device was constructed of two sheets of filter media which was joined at the edge and at intervals down the filter to form the pockets. The header was modified to take the from of a unitary front frame to which each filter wedge was attached. The design and construction of the Dri-Pak filter as of 1968 can be seen in RTX-012. (Rivers RTX-002 at 5).

186. As work continued in the Dri-Pak program, demand for inexpensive non-woven filters grew. American Air Filter's answer was the Dri-Pak 2540 and 2530 filters introduced before 1966. These filters were constructed of non-woven filter media which had welded seams. To prevent billowing, welded bars join the two halves of the pocket together closely. On cross examination Rivers testified that his reference to "welded bars" meant the welding of one side of the pocket to subdivide the pocket into separate cylindrical air passages. He testified that "spacer" was a poor choice of words to describe this close joining of the pocket sides. (Rivers RTX-002 at 5, 6; Rivers Tr. at 484-487).

187. According to Rivers the Dri-Pak filter CPX-10 does not make the claimed CPX-5 filter obvious. (Rivers Tr. at 483).

239

188. The Dri-Pak 2540 filter pocket is constructed by folding a section of pre-cut media comprising non-woven synthetic fibers and heat sealing the two edges. The filter pocket is further divided into "tubes" by heat sealing the two layers of media together (opposite sides of the filter pockets) at regular intervals. The construction of the Dri-Pak 2530, which uses an all synthetic nonwoven media, has a similar construction. The initial Dri-Pak filter pocket was made of fiber glass. (Bergman CX-59 at 14, 16; Rivers Tr. at 411; RTX-010).

189. Neither the Dri-Pak 2540 filter pocket or the 2530 filter pocket make use of separators. (Bergman CX-59 at 14).

190. CPX-10 is a representative Dri-Pak filter. (Rivers Tr. at 385, 386).

191. RTX-012c describes a series of Dri-Pak filters. (Rivers Tr. at 387, 388).

192. The general form of filters shown in RTX-012c is the same as CPX-10 but the materials of which CPX-10 is constructed are not the same as the materials for RTX-012c. The filter CPX-10 is a non-flammable filter which has a glass fiber scrim on the back side which cannot burn. The filters in RTX-12c are of a different fire rating and they have woven fabric scrims or back-up material. The header frame of CPX-10 was a standard one that was used for many years. (Rivers Tr. at 389, 390, 391).

193. CX-75 is also directed to Dri-Pak filters. (Rivers Tr. at 393, 394).

194. Referring to col. 1 starting around line 57 and proceeding to column 2, line 2 of the '375 patent describes in essence the Dri-Pak filter type shown in CPX-10. Therein the '375 patent characterized the tube-like filter pockets as made by joining directly opposite sides of the filter pocket to one another by tack stitching or continuous stitching. This is seen in physical exhibit CPX-10. It is said in the '375 patent that the area where

240

the sides are joined to one another are compressed together. This however "reduces the effective filter area even though each pocket is prevented from ballooning against the adjacent pocket". Also the flow of air into the pockets is reduced and the resistance of the element to the passage of air is increased. Rivers obtained U.S. Pat. No. 2,853,154 (RTX-011) on the generic construction of a filter illustrated by Dri-Pak CPX-10. (Rivers Tr. at 404, 405; CX-1, col. 1, lines 60-68, col. 2 lines 1-2).

195. With CPX-10, in operation the air approaching the face puts pressure differential across the filter which causes the bags to inflate rather like an air mattress and when the air is shut off, in initial stages it would tend to go back to the collapsed state. Rivers stated that air filters will fill up with use and this particular filter, when it becomes dirty, becomes stiffer but the filter still maintains its shape. However if the filter is still relatively clean and the air is shut off, the filter droops and if it is not provided with any additional support it will collapse. In a typical way of operating a building, the air for a filter is shut on and off at least once a day. (Rivers Tr. at 406, 407, 408).

196. RTX-010 refers to American Air Filter Dri-Pak Series 40. (Rivers Tr. at 412, 413).

197. An American Air Filter Bulletin 215B, said to have a copyright date of 1971 set forth the following advantages of DRI-Pak filter:

> Ideal for use in industrial and commercial ventilating systems or in central air conditioning systems, the dri-Pak offers these outstanding advantages: (1) eliminates need for costly, rigid back-up wire grid and metal enclosure, (2) collapsible, disposable cartridge requires less space for storage and service, (3) easier to service since the unit in folded state is less bulky, (4) less care required in installation since wire grid is not required, (5) unique design greatly reduces chance to dirt falling out when the cartridge is being removed for disposal.

(RTX-012 at 2).

198. In a pocket filter the type of spacer (separator) in a pocket that is used and the method of attachment to the pocket flanks is critical for maintaining the desired pocket dimensions. In the '375 patent, the separator and the welding of the separator as well as the other elements of the '375 patent construction act as an inseparable unit in preventing the filter pocket from billowing. The filter of the '375 patent has a combination of continuous weld lines and welded spacers. In the '375 patent, the method for fastening the separator (spacer) to the filter pocket flanks is critical because the fastening method also provides a stiffening means for the filter pocket flanks. Thus the welding and fusion of the spacing element to the pocket flank provides the stiffening means in the '375 patent. In contrast, the sewing of a spacer element to the filter pocket flanks, as in the Bauder '059 patent, does not provide a stiffening means for the flanks. It is not possible to envision "sewed or otherwise secured" as stated in the '059 patent to refer to a stiffening method for the flanks. (Bergman CX-59 at 4, 5, 21).

199. As to testing "Viledon" filters, Bauder testified:

> Q Mr. Bauder, have you ever tested the effect of pyramidal spaces in air flow situation?
>
> A Yes.
>
> Q And what is your conclusion based on those tests?
>
> A That they serve the same function as the filamentary stays in the high flow.
>
> Q When did you do those tests?
>
> A I can't answer that question precisely, but we have tested the Viledon MF-85 and 95 frequently.
>
> Q Did you do particle measurements during pulsating flow?
>
> A Yes.
>
> Q What was the result of that?

A Well, we collected data of particle counts down stream of the filter.

Q Were they according to ashray [sic] standards?

A No. Ashray -- no.

(Bauder Tr. at 318).

200. It is not the process of welding that is unique to the '375 patent, but rather where and how the welds are made. In the '375 patent the welds perform not only the function of joining different components of the filter, but also provide a configuration of structural strength. The '375 patent is directed to a self-supporting gas filter element which includes using continuous welds placed in particular locations on the wedge-shaped filter pockets to achieve a self-support structure that is secured to a holding frame, and having the welding of a spacing element into the wedge-shaped pockets in a particular fashion. (Bergman CX-59 at 17).

200a. Rivers and Bauder testified that the use of the welded pyramidal spacers within the filter pocket as taught in the '375 patent make no contribution to the self-supporting character of the pockets in the air stream. (Rivers Tr. at 508. Bauder Tr. at 305). However, neither denied that the welding of the spacer media provides a stiffening at the attachment of the spacer and side wall of the pocket, as attested by complainant's Reindardt and expert Bergman. Additionally, complainant's Bergman and Reinhardt persuasively testified that the tubular or pyramidal spacer function as an inflated sock or air cushion providing a dampening effect on vibration caused by the airstream. This is consistent with respondents' touting of the "aerodynamic spacers" in their pocket filters. (Rivers RTX-002 at 9-10; Rivers Tr. at 508; Bauder RTX-001 at 5, 10-11; Bergman CX-59 at 4, 12-13; Reinhardt CX-63 at 5-6; CX-9 at 2).

201. Visual inspection has been made of complainant's pocket filter RPTX-1 designated as the MF-90 in the U.S. and the MF-85 in Germany and CPX-5 (complainant's model F-45). Upon examination of RPTX-1 filter, supported only by its frame and without the removable rods, the individual pockets do tend to collapse laterally against each other under no air flow conditions. Pockets of complainant's model F-45 do not have a tendency to so collapse. It has been stipulated that the MF-85 and MF-90 and similar model MF-95 are covered under the '375 patent which requires in claim 1 that the filter pockets be self-supporting, and it has already been finally decided in this investigation by summary determination based on that stipulation that these models are part of the domestic industry covered under that patent. The pertinent claim 1 element that the filter pocket be "self-supporting" is not interpreted as having no tendency to collapse laterally against each other under no air flow conditions. This is consistent with the specification's statement that the invention results in "self-supporting properties in the air stream." Similarly, complainant's promotional literature states: "Self-supported filter pocket always stays rigid in the air-stream." (Order No. 13 March 1, 1988; Notice of Commission Decision Not to Review April 1, 1988; CX-1, col. 2, l. 32; CX-8 at 2, 4, 6; CX-16 at 3).

201a. Complainant's brochure titled "General Survey Viledon Air Filter" describes, in pertinent part, each of its F-45 and T-60 as "Filter pockets self-supporting, sealed free from leaks". Each of complainant's MF-85 and MF-95 is described, in pertinent part, "Filter pockets self-supporting through integrated support, sealed free from leaks". (CX-17 at 2).

202. Frank H. Janke is presently general manager of Freudenberg's Viledon Filter Division. The Viledon Filter Division is responsive for

complainant's filter business and is headquartered in Birmingham, Michigan. Prior to January 1987 he was president of Eaton Products International, Inc., sometimes referred to as Eaton Products or EPI. At that time Eaton Products served as the distributor for nonwoven gas filter elements manufactured in Germany by Firma Carl Freudenberg (a corporate affiliate of complainant) and imported by Eaton Products for sale in the United States. The construction of these filters which EPI imported and sold prior to January 1987 was the same as that of the present product line of both complainant and respondents. In January 1987 the distribution function of Eaton Products was acquired by complainant. The distribution function became complainant's Viledon Filter Division and Janke became general manager of that Viledon Filter Division. Prior to coming to Eaton Products, Janke had other employment which directly related to sales and marketing of various types of filters, and he has followed activities and developments in the filter industry for a number of years. For the last twelve years Janke has held corporate officer positions in companies primarily involved in the filter business. For eight years he was with Tri-Dim Filter Corporation in Hawthorne, New Jersey, as a Vice President, and for the next four years he was President and Chief Operating Officer of Eaton Products International. (Janke CX-45 at 1, 2).

203. "Viledon", a registered trademark owned by complainant's corporate affiliate, Firma Carl Freudenberg of the Federal Republic of Germany, is the trademark under which complainant markets, promotes and sells special nonwoven articles for use in industry. The "Viledon" trademark is used by complainant in association with the patented gas filter elements such in issue. (Janke CX-45 at 4).

204. Janke first became familiar with the Freudenberg pocket filters in the early 1980's while he was employed at Tri-Dim Filter Corporation. The president of Tri-Dim, Mr. John Stanley, brought samples of the filters back to the United States following a trip to Europe. Subsequently, in 1983, Eaton Products International obtained the marketing and distribution rights for the Viledon Filter line for North America and received its first shipment of filters under the '375 patent from Weinheim, West Germany in the fall of 1983. Sales of those filters have been growing ever since the 1983 introduction. For example, sales grew from approximately 4,000 units in 1983-1984 to 13,500 units in 1985 to 31,360 units in 1986. Dollar sales volume has shown a similar increase. In 1987 sales continued to show an increase and sales volume exceeded 40,000 units. For 1988, sales volume is projected to be 75,000 domestically produced units, with a sales value of 4.1 million dollars. (Janke CX-45 at 4).

205. The automobile industry is presently the major end user of "Viledon" gas filter elements. Approximately sixty percent of all gas filters sold by complainant are sold through the distributor network to the automotive and vehicle industries, with customers including all major manufacturers, e.g., Ford, GM and Chrysler, as well as major foreign automobile manufacturers who purchase for use in their domestic assembly plants. In addition, the filter finds utility in other areas on which a dust free atmosphere is required, including hospitals, the food processing industry, the pharmaceutical industry, and air intake ducts for gas turbines. (Janke CX-45 at 4, 5).

206. Respondents' Borkent testified in deposition:

Q Did you ever purchase a "Viledon" pocket filter?

A Yes, we did.

Q When?

A Sometime in the spring of '84.

* * *

Q Wasn't it the summer of '84 that Filtrair started building its first pocket filter?

A The summer of '84, we did the first trials and the first pocket filter we made was not as a single pocket with a single frame and is not the copy, the pocket that we later used form making a six-pocket filter element.

Q The Viledon filter which you purchased was which type?

A We purchased several, but at least the G/35 or the G/35K.

Q How about the F/45?

A Also.

Q And the F/45 corresponds to your later model, PFL/EU5; right?

A Yes.

(Borkent CPX-2 at 119, 120).

207. Respondents made a first sketch of model PFL/EU5 in approximately March 1984. The first written description of such a model was made in approximately February 1985. The first prototype of PFL/EU5 was completed in approximately June 1985. (CX-38, Ans. to. Int. No. 8).

208. Respondents tested Viledon G35 and F45 units in approximately April 1984. (CX-38, Ans. to Int. No. 22).

209. CPX-5 is a Viledon F-45 filter which is representative of complainant's filter. (Janke Tr. at 8. 12).

210. CPX-1 is representative of the accused filters. (Janke Tr. at 8).

211. Janke testified as to the essential elements of claim 1 of the '375 patent and the correspondence of those elements to complainant's CPX-5 (model T-45) and respondents' CPX-1 (PFL/EU5) as follows:

CLAIM

COMPLAINANT'S AND RESPONDENTS' GAS FILTERS*

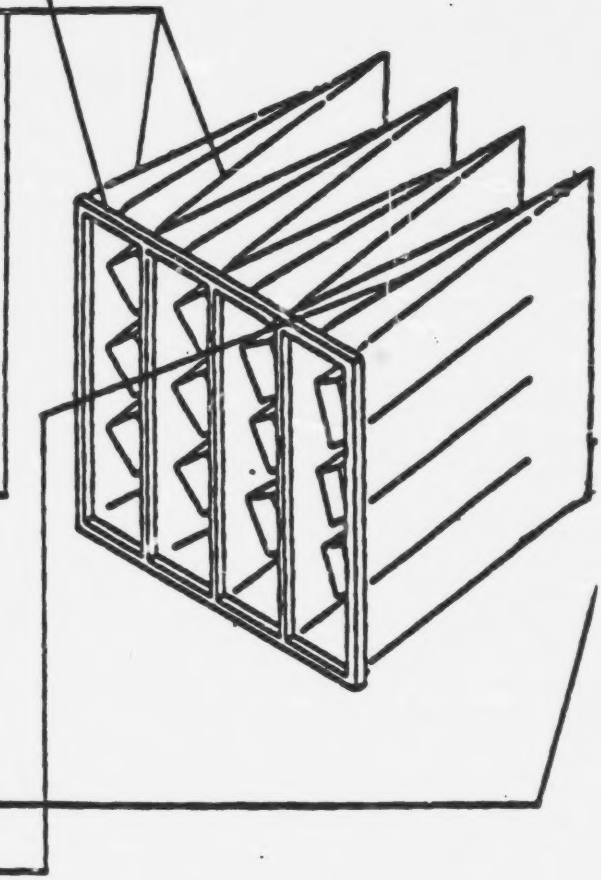
1. A gas filter element comprising a holding frame and at least one self-supporting wedge-shaped filter pocket

each [pocket] having its wide end open and secured to said frame,

each filter pocket comprising a pair of substantially symmetrical pocket halves

formed of fusible fibers

and welded to one another along the wedge edge and centrally along the opposite wedge end faces

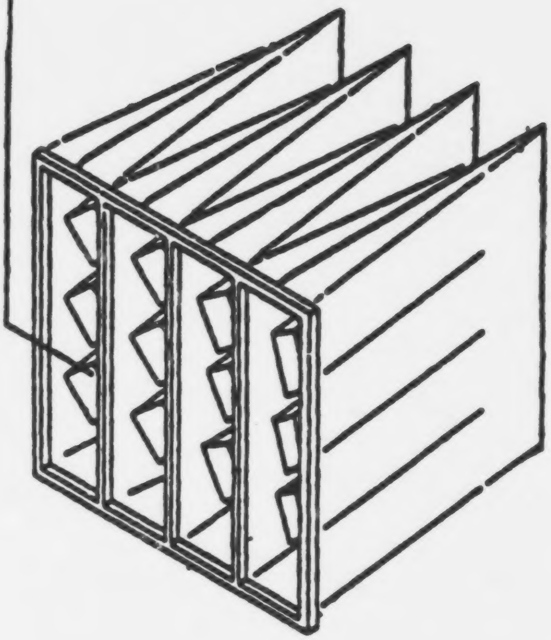


BEST COPY AVAILABLE

CLAIM

COMPLAINANT'S AND RESPONDENTS' GAS FILTERS

and at least one laminar spacing element disposed within the pocket and extending from adjacent the open end toward the wedge edge,



the spacing element being welded to the opposite inclined wedge faces,

the filter pocket being rendered self-supporting by the welding of the pocket halves to one another and the welding of the spacing element to the pocket.

(Janke CX-45 at 7, 8; Janke Tr. at 7 to 9).

BEST COPY AVAILABLE

212. Referring to dependent claims 2, 3, 4, 6, 7, 8 and 9, Janke testified that each of the elements of said dependent claims are in each of CPX-1 and CPX-5. (Janke CX-45 at 9 to 11).

213. Freudenberg makes several different types of filters with different model numbers. One filter is called an M-45. There is also an F-45, T-60, MF 85, MF-90 (which in Germany is called an MF-85), MF-95 and a T-90. The T-90 is a new filter and is replacing the MF-90. The T-90 is not on the U.S. market as yet. The difference between the T-60 and the T-90 is efficiency. All of said filters are designed basically in the same way. They all have wedge shaped multiple pockets which multiple pockets are each made of stemetrical pocket halves welded together. They are all made of media that has fibers but the fibers are somewhat different. With the F-45 and the T-60 some of the fibers have a larger diameter than the fibers used on the MF-85, MF-90 and the MF-95. (Janke Tr. at 8 to 11).

214. CPX-5 is a Freudenberg filter. Like all of the Freudenberg filters listed in the previous finding, it has the pocket welded along the top seam and along the back edge and along the bottom of the pocket; also there are multiple pyramidal shape spacers welded to each side of the pockets. Each of the spacers is a piece of material that is welded by fusion between either side of the pocket and extends from the face of the pocket to the wedge edge and is further used to control the distance between the different pockets. The spacers create a control such that the pocket does not extend and touch the other side or reversely collapse when in the air stream. CPX-5 has five pockets. (Janke Tr. at 11 to 15).

215. With respect to the uniqueness of CPX-5, complainant's Janke testified:

> THE WITNESS: And there are four openings above or below, if you will, the spacers. What occurs is in the air stream. Air is coming into the filter, and the object of this is the uniqueness, is the fact of its self supported. It will stay open, it will not collapse. What it does is, with this opening, it allows full utilization of the filter media.
>
> JUDGE LUCKERN: Now when you say opening, the way you have it, I mean it's all--
>
> THE WITNESS: I'm talking about the complete pocket from fore all the way to the aft.
>
> JUDGE LUCKERN: That can't be closed in any way, can it?
>
> THE WITNESS: No. That's the uniqueness of it. This is rigid.

(Janke Tr. at 15-16).

216. Janke testified further as to CPX-5

> JUDGE LUCKERN: And it's rigid because of what? What do you call those? Are those metal? Is there a term of the art that you call those?
>
> THE WITNESS: Well this is your weld, sir. And this is part of--
>
> JUDGE LUCKERN: But this is, a month from now I won't know what you are pointing to when you say this is your weld.
>
> THE WITNESS: This is the weld at the top of the pocket. It is welded by fusion, it extends to the rear of the pocket, and down along the back, what we call the wedge here.
>
> You can see it in a wedge shape, along the back of the wedge, underneath as on the top here, and this is the integral part of the uniqueness of the self supported weld, is part of supporting the pocket.
>
> JUDGE LUCKERN: Is this weld just one piece of metal? Is it?

THE WITNESS: No, it is actually, what we're talking about when we say weld, we're talking about a fiber that's fusible. You will take a synthetic fiber, and certain fibers you melt, and make the weld, and the weld is a stiffener.

Prior art was sewing. They would sew pockets together, and this was a new method, by which they could not only bring the pocket sides together, but they could bring them in such a way that the mechanism, meaning the weld, would act as a supporting strut to hold the pocket in place.

JUDGE LUCKERN: What do you call the metal? That's metal on top that you've got?

THE WITNESS: No sir. It is the media.

JUDGE LUCKERN: No, no. What do you call, that you have your left hand on now? What do you call that?

THE WITNESS: That's the header.

JUDGE LUCKERN: Is that a polymer? Or is that a metal, or what?

THE WITNESS: No sir. That's a polyurethane foam.

JUDGE LUCKERN: I see.

THE WITNESS: And this is the mechanism by which you will hold it into what we call a filter bank. On the top of this building they will have a filter bank. You will put this unit into it, take outside air, pass it through here.

JUDGE LUCKERN: The spacers? Here are the spacers, you're talking about.

THE WITNESS: Yes. Into this opening pocket. All of these pockets act. The spacer controls these pockets from touching. If they touch, then you don't get air passing, you have blocking. And so what you want to do, is when air comes through the pocket, it has a chance to come out the sides of the filter.

JUDGE LUCKERN: How does it get out of there? Are there holes in the filter?

THE WITNESS: No, it's a media that will act. It's not a dense media. You can breathe it, you can hold it up to your face, like a face mask, sir.

252

JUDGE LUCKERN: Oh.

THE WITNESS: You know, when you put a face mask on, you breathe it, and what it does is when you, what this does is when the outside air comes in, it collects the dirt inside the pocket, and allows fresh air. The clean air to go into the building or into your room, into the air conditioning unit, the cooling air to cool the air down.

JUDGE LUCKERN: What is the white material made of? What's that anyway? Is that the white of this, what you have in your hand, CPX-5.

THE WITNESS: I believe it is a polyester. And I believe these spacers are also polyester.

JUDGE LUCKERN: Do you have any, to your knowledge, and of course you are only testifying from your knowledge, collecting in the spacers? Does dirt collect there?

THE WITNESS: There can be some. There is a certain advantage, that you will collect large particles inside the spacer. That is a secondary point.

JUDGE LUCKERN: And again, would you tell me what your testimony is, what the purpose of the spacers are again? I know you've already said it, but--

THE WITNESS: Again, to control the distance between the size of the pocket. In the, if these weren't here, and it wasn't designed the way it was, you could open it up and you would have a ballooning, where media could literally be forced in touch. And once you have that--

JUDGE LUCKERN: Now wait a minute. You've got to describe for the record what you are doing right now.

THE WITNESS: Okay. On the record, I am pinching two pockets together, and the inside of each pocket is touching, so what it does is it eliminates two sides from air flowing out of, and you now have reduced it to only being able to exit out of one side of one pocket on the far side, and air out of the other side.

JUDGE LUCKERN: What you are saying is you don't want this?

THE WITNESS: That's correct.

JUDGE LUCKERN: All right.

253

> THE WITNESS: This is a function. The other is, that because of the design, the pyramidal design, it also can help control, because once air passes through here in a velocity it inflates, and will also give a certain stiffening from the sides actually even collapsing, going the other way. Because of the ballooning effect of the air inside the pyramid.

(Janke Tr. at 15 to 20).

217. CPX-5 has a rigid header or frame. The Cambridge Hi-Flo filter has a rigid header or frame. (Janke Tr. at 21, 22).

218. The pyrimidal spacers in CPX-5 are not rigid. Rather they are a soft, pliable piece of fabric. (Janke Tr. at 23).

219. Fibers in complainant's MF-85 are advertised as being micro fine. Fibers in complainant's T-60 are not so advertised because they have a bigger diameter. The fiber mix in the MF series is a more efficient mix than in the T-60 or F-45 filters. The following are some of the differences in the fibers used in the different Freudenberg air filters: (1) diameter of the fibers, (2) relative coarseness or fineness of the fibers, and (3) whether the fibers are charged or non-charged. (Janke Tr. at 25, 26, 27).

220. With respect to Janke's use of the term "self-supporting:"

> Q Now you testified that these, I believe you used the word, that these filter pockets are self-supporting?
>
> A Yes.
>
> Q Is that mean the same thing as self supported? Is there any difference to you between those terms?
>
> A Self supported and self supporting. I'm not sure I could distinguish. I think that's interpretation.
>
> Q Well you described these--
>
> A I would describe those as self supporting.
>
> Q All right. And that means that, let me get this straight. Does that mean that if you shut the air flow off, the pockets will standup, just like this?

254

> A That's correct.
>
> Q They will stay up that way?
>
> A Yes.
>
> Q They sort of stand at attention, even though the air isn't flowing?
>
> A That's correct.
>
> JUDGE LUCKERN: In other words, they don't close. I just want to make sure the record is clear. They stand up like this. Maybe you just put in words, Mr.-- Make sure he is.
>
> MR. POLK: Let me rephrase the question, Your Honor.
>
> * * *
>
> BY MR. POLK:
>
> Q Clarify it even more. The pockets, when the air is shut off, will not droop.
>
> A That is correct.
>
> Q And on this F-45 filter, correct?
>
> A Yes.

(Janke Tr. at 27-28).

221. The MF series of Freudenberg makes use of a system of metal rods and they have more pockets. With respect to the purpose of the metal rods Janke testified:

> Q And the purpose of those metal rods is to hold up the pockets when the air stops flowing, isn't that correct?
>
> A No.
>
> Q Well isn't that the effect of those rods?
>
> A No. We use them, actually, we use those for ease of putting into the air system, into a bank, a filter bank, ease of pulling them out.
>
> In reality we have taken them out on many, many instances because we are having a problem with corrosion and in the turbine industry, we have used them. So the unit itself is self supporting. The rods we have used it

> in the U.S. as a convenience of getting in and out, but we have taken them out.
>
> And we have also replaced that because we take them out as much as we, and that's why we replaced it with a T-60. We don't use them any more, or won't be using them anymore.
>
> * * *
>
> Q Mr. Janke, I am holding a metal rod which is at the back end of the pockets, and it's threaded through all eight of the pockets. Do you see that?
>
> A Yes.
>
> Q And you would agree that I've just described that correctly, wouldn't you? That this rod is threaded through little eyelets in all eight of the pockets?
>
> A That's correct.
>
> Q And then there is a diagonal supporting rod, isn't there? Underneath here? Which runs from the--
>
> A I don't know that it--
>
> Q Rigid frame, up to the transverse rod, isn't that correct?
>
> A I don't use it. We haven't used it really as a supporting, we use it as a controlling.
>
> Q Well, it's a rod that runs in that diagonal direction, doesn't it?
>
> A That's correct.

(Janke Tr. at 29-30, 32, 33).

222. As to a Freudenberg filter MF-85 containing the metal rods Janke testified:

> Q Now, Mr. Janke, the MF-85 filter, which is sitting on the floor here, that doesn't stand up as straight as the F-45, does it?
>
> A I don't think it was designed to sit on the floor.

Q Well, all I'm saying to you, Mr. Janke, when you put it down alongside the F-45, the pockets fold up and collapse, don't they?

A If you reversed it, you would find that it could stand up.

Q Reversed it, you mean you put the metal rod on the bottom?

A That's it. If you wished to hold it that way.

Q Oh.

JUDGE LUCKERN: Is that what you meant by reverse, the way he has it now?

THE WITNESS: Yes.

JUDGE LUCKERN: Can you describe in words what you've just done, so that somebody looking at it--

THE WITNESS: Yes sir, I can. What I did was, I turned the filter completely over, so that the transverse metal rod is now on the bottom side, rather than the top side.

BY MR. POLK:

Q But when the MF-85 is installed in an air duct, in fact the metal rod is on the top, isn't it?

A Yes.

Q Isn't that correct?

A Yes, if you use it, yes it will be.

And--

JUDGE LUCKERN: And then, Mr. Janke, when the metal rod is on the top, how would you describe what you see now? The configuration of this? When the meal rod is on the top, as compared with CPX-5, which is there?

THE WITNESS: If they are both in the air stream, whether the air is on or off, they will both be self supporting.

JUDGE LUCKERN: But right now, the way I'm looking at the one, one seems to be leaning, sort of--

257

THE WITNESS: Okay.

JUDGE LUCKERN: Wait a minute. I'm doing the same thing, I'm telling you people not to do. But the green one doesn't seem to be upright like the other one. Maybe you can put it words.

Could you tell me, because you are the technical person, could you tell me, or describe how ... [RPTX-001] and CPX 5, how they exist right now, on the floor? You understand what I'm trying to say?

THE WITNESS: Okay, yes.

JUDGE LUCKERN: Because they obviously look different to me. Could you put in words how they look?

THE WITNESS: Okay, I wanted to make a correction. I'm really not technical.

JUDGE LUCKERN: Well--

THE WITNESS: But I'm knowledgeable.

JUDGE LUCKERN: Knowledgeable, all right, knowledgeable.

THE WITNESS: Okay. What has occurred is you have different types of media. And one is more rigid, and it's a different composition, it has a larger fiber, and so there it will, you can rest it on the floor, and it will stand up straight. The other media--

JUDGE LUCKERN: That's RTX ... [RPTX-001], the other media. That's the green one.

THE WITNESS: The green, now I'm going to address what I just described was the--

* * *

THE WITNESS: The media that we're looking at here now is a lot finer.

* * *

THE WITNESS: ... [RPTX-001] It's a lot finer, and cannot stand up by itself without holding it. In the, that's sitting on the ground. In the air stream it is designed with the welds to be self supporting, not to lay on the ground.

JUDGE LUCKERN: All right.

BY MR. POLK:

Q Now, Mr. Janke, you would agree, wouldn't you, that the pockets on the F-45 are more upright, or more rigid than the pockets on the MF-85, isn't that true?

A That's correct.

Q And you said that you use these filters often without the metal rods, is that true?

A Yes.

Q All right. Just give me a moment to take the metal rods out. Bear with me for a moment, Your Honor.

* * *

Q Mr. Janke, you said the system of rods was used primarily to prevent the pockets from fluttering back and forth? Is that correct?

A Well, it's a way of controlling it. As you pointed out, the media is different. What we rely on for it' self supporting is the welds, as you see, are duplicated. As you commented the frame, which incidentially, this frame is cracked, which certainly doesn't help its rigidity either, it's broken.

Q All right, Mr. Janke, there is a crack in this [RPTX-001], but tell me. Try to move that, if you would, where the crack is.

* * *

MR. POLK: There is a crack, Your Honor, about two and a half inches away from the yellow exhibit sticker.

JUDGE LUCKERN: All right.

Q Now, did I hear you correctly before, when you said that, strike that. Mr. Janke, is there a difference in the density of the fibers between the, let's say the F-45 on the one hand, and the T-60, and the MF-85, -90, -95 series?

A Yes.

259

Q Which is more dense?

A The MF.

Q The MF is more?

A Yes. When we are talking about density, we are talking about a filter efficiency, for efficiency's sake. You can get, on the other hand, you can get a very dense filter, that has very low efficiency, where, so when you ask me density, I look at density in a way of filter efficiency.

So it has a higher pressure drop air, has a greater difficulty going through it because of its efficiency. It catches a finer particle. It's not a structural definition.

Q And the diameters of the fibers in the F-45 or the T-60 or T-90, those are bigger around than the fibers?

* * *

THE WITNESS: Let me make sure I understand the question you're asking. Whether the fibers are larger in the F-45 than in the MF-85, 90, and 95?

MR. POLK: Yes, sir, that's the question.

THE WITNESS: They are.

(Janke Tr. ar 34 to 44).

223. As to the difference between complainant's models, Janke testified:

A. Yes. Basically what they are is efficiently differences. The lower our model number, as in F-45, is relatively refers to it as an efficiency rating of 45 percent based on a test that is standard in the United States.

The T-60, again, relates to an efficiency of 60 percent efficient. The MF refers to again, as in the 85, that's the German test rating where it says under their ratings, it is an efficiency of 85. In the U.S., we have an MF-90 which denotes 90 percent efficient.

The T-90 again reiterates that where again we change the composition of the medias, but the efficiency was

260

> absolutely the same. And an MF-95 again is a higher efficiency rating.

(Janke Tr. at 50).

224. As to how complainant's pocket filters are held in operation:

> A. In operation, they're held inside a frame, and they're clipped to the frame. There's a frame that is L-shaped that we can take the filters slide through and it happens to be in most cases, you can fit them in the front, where our frame interlocks with another series of frames that can go from floor to ceiling and from side to side. But the pockets extend beyond the frame which is again a feature of our filters that become the support. The pockets will stand up by themselves. They don't need strings or will they collapse in a variable air flow system.
>
> Q. So the filter pockets are held by a frame during operation?
>
> A. That's correct.
>
> Q. The filter pockets are not designed to operate without being held in a frame?
>
> A. That's correct.
>
> Q. Such as sitting on a floor?
>
> A. Right.
>
> Q. And in operation, if I understood you correctly, air is blowing through the filter?
>
> A. Yes, it is from the front to the rear, usually.
>
> * * *
>
> Q. Mr. Janke, the characteristics of the filter that you testified to, are those realized in operation of the filter in a natural commercial setting?
>
> A. They are recognized once positioned in an environment that they were intended, meaning, a filter bank. Whether the airstream is on or off, they actually the uniqueness is that they are self-supporting with or without air flow in that environment.

(Janke Tr. at 51 to 52).

225. Janke sees no difference in rigidity of the media as to complainant's F-45 (CPX-5) and respondents' EU-5 (CPX-1) which is alleged to infringe. (Janke Tr. at 53, 54).

226. Certain of complainant's gas filters, produced according to the '375 patent are depicted in its brochure CX-8 and can be represented by CPX-5. Respondents' alleged infringing filters are depicted in their brochure CX-4 and can be represented by CPX-1. Visual comparison of CX-8 and CX-4 and of CPX-5 and CPX-1 show a striking similarity.

227. Dr. Heinz Reinhardt is employed by Firma Carl Freudenberg, a corporate affiliate of complainant. (Reinhardt CX-63 at 1).

228. Reinhardt studied from 1969 to 1974 at the Technical University Karlsruhe and subsequently took a degree from this University, his thesis being on dust separation. He received his doctorate in February 1979. Since January 1980 he has been employed by Freudenberg and from then until 1983 he was responsible for filter media which are used in industrial dust removal. Since 1983 he has been the head of a Freudenberg Division which is concerned with air filtration in varying fields of application. Within the framework of his activities he was and he still is active on various committees. Thus, he cooperated in drafting a guideline for "Purification of Air" at the VDI (Association of German Engineers). At present he is deputy chairman of a committee of the DIN (German Institute for Standardization) which revises the ASHRAE-Standard 52/76 adopted in Germany from the United States. To date he has authored approximately 10 publications relating to gas filtration which have been published in German professional journals. (Reinhardt CX-63 at 1, 2).

229. Reinhardt is familiar with the "Hi-Flo" pocket filters and those filters have been tested under his guidance in comparison with Freudenberg's pocket filter. The sample of the Hi-Flo filter examined was a "Camfil Hi-Flo 95" and consisted of two web-cuts which are joined together by sewing at the edges and are anchored at the front side to a holding frame of sheet metal. In comparison with the Hi-Flo filter, he tested a Freudenberg pocket filter according to the '375 patent, namely a model "T-90". (Reinhardt CX-63 at 2).

230. In Reinhardt's tests, the Hi-Flo and T-90 filters were compared initially simply by placing them on the floor, side by side, and applying a paper load to both filter arrangements. The Hi-Flo filter partially collapsed whereas the T-90 filter, which is self-supporting, remained rigid. In an operating experiment, the Hi-Flo and T-90 filters were placed into an air channel test rig which enables viewing of the filter pocket behavior during operation. The air flow was switched on and off several times and in each case of air shut-off the Hi-Flo filter collapsed while the T-90 filter remained rigid due to its self-supporting structure. In an additional experiment, the same Hi-Flo and T-90 filters, both loaded with the same amount of dust according to ASHRAE standards, were placed separately into the test rig assembly. Each filter was placed in operation over a two minute period, during which the air flow was switched on and off five times. The dust particles which penetrated through the filter to the "clean air side" were measured after identical operation over the two-minute period. The loaded T-90 filter permitted approximately 70 particles to penetrate through the filter to the clean air side, whereas the equally loaded Hi-Flo filter

permitted 9,000 particles to pass through. The difference in performance of the two filters is attributed by Reinhardt to the structure of the filter in that the constant collapse of the Hi-Flo filter caused deterioration of its filter material. The structural integrity of the T-90 filter was said to avoid such deterioration. (Reinhardt CX-63 at 2, 3).

231. Reinhardt testified as to T-90 and Hi-Flo 95 used in his tests:

> Q Dr. Reinhardt, the Freudenberg T-90 filter, is that designed for the same particle size as the Camfil Hi-Flo 95?
>
> A In terms of size ranges, yes.
>
> Q Doctor, can you tell us today, with regard to the Freudenberg T-90 filter, exactly what is the particle size for which that filter is designed?
>
> A First of all, it is designed for a degree of efficiency according to the ASHRAE test, of approximately 90 percent. And this means that it would be within the same size range between 1 to 2 mu. When it comes to those sizes you cannot make clear differentiations anymore.
>
> Q Dr. Reinhardt is the T-90 filter, is it specifically designed for turbulent air conditions?
>
> A The T-90 is designed by us for applications in gas turbines, therefore the designation "T".
>
> Q I see. Dr. Reinhardt, to your knowledge, and maybe you don't know, but to your knowledge is the camfil Hi-Flo 95 specifically designed for use with gas turbines?
>
> A No. It is a 95 percent filter on the basis of ASHRAE.

(Reinhardt Tr. at 710, 711).

232. Reinhardt's experiments are shown in a video tape which was prepared under his direction. (Reinhardt CS-63 at 3; CPX-8).

233. Observation of video tape CPX-8 shows a comparison of CPX-5 type Freudenberg filter with two Hi-Flo filters. Unlike CPX-11 and CPX-11a each of the Hi-Flo filters has a ribbon across each of the top and bottom

sides which is attached to the pocket edges and also has a mid tranverse bar. The Freudenberg filter on the video before any air flow stands erect and rigid and supports some 3" of paper. The Hi-Flo filters before air flow was not rigid and would not support the paper. (CPX-8, CX-17).

234. Reinhardt testified that the Hi-Flo filters consist of mats of brittle glass fibers and have only limited shape stability; that thus the filter pockets regularly collapse into each other during normal use when air flow is switched off; that this collapse causes strong folds to form and as a consequence considerable dust breaks through the filter medium occur; that such dust breaks also occur at low air flow rates through the filter and with increasing dust accumulation, especially under humid conditions; and that pocket filters of this kind therefore have major disadvantages for use in the field of high-efficiency filtration; that in order to avoid an undesirable inflation of pockets, holders are arranged between opposite side surfaces of each pocket which are formed by filamentary stays; that the filaments are applied by mechanical sewing, that at the apertures through the respective filter mats there are needle puncture holes which are rather ineffectively covered by an adhesive, that this becomes apparent for in the region of the apertures where after prolonged use there is a contamination by dust particles which can be seen on the clean air side of the filter mats; that there are several hundreds of such spots on each pocket filter; that the glass fibers used as the filter medium in these filters have a tendency to break when the physical configuration of the filter pockets is changed, for instance, in installation and during operating movements of the filter medium; that this results in fiber fragments breaking off which contaminate the cleaned air;

that those filter pockets therefore need to be flexible so that they can be moved, that is flexed, out of the way after the filter is installed to guarantee that there are no obstacles in the clean air side channel after the air flow is switched off; and that Hi-Flo pocket filters have such flexibility because they are not self-supporting pocket filters. (Reinhardt CX-63 at 4,5).

235. Reinhardt testified that in the Freudenberg filters, such as T-90, F-45 and MF-90, the filter pockets are formed of flexible filter mats; that these mats are cut in pairs of two to form the wedge shape and joined by a U-shaped continuous peripheral weld; that in the inside of the pockets, hollow pyramidal spacers are welded in as shown in the '375 patent; that an important element of the Freudenberg filter is the U-formed continuous welding seam which runs from the top of the filter pocket, down the back and along the bottom of the filter pocket, in effect constituting a U-shaped stiffening frame; that also important are the spacing elements of the Freudenberg filters which are, on both sides, continuously welded to the filter pocket sides along most of their longitudinal direction (front to back); that this not only stiffens the filter mats themselves and makes their shape more rigid but brings about an evening out of the air flow within the filter pocket; that the provision of a spacer elements of pyramidal form, constituting tubular elements running, with diminishing diameter, from front to back with the filter pocket, gives additional important advantages; that such a spacer construction provides an "air cushion" which gently holds the opposed inside faces of of each filter pocket so that they do not move significantly toward or away from each other; that the pyramidal spacer elements are found, in practice, to provide structural support to the whole assembly longitudinally,

vertically and laterally; that those spacers provide a dampening effect on swinging or fluttering movements of the filter mats or other oscillations, such as resonant vibrations, caused by air flow through the filter assembly; that thus, even abrupt changes in air velocity blowing into the filter do not result in undesirable side to side oscillations; and that the action of such spacers is entirely different from the action, for instance, of the filamentary stays of the Hi-Flo filters; and that those filamentary stays do not have the multidirectional stabilizing effect of the Freudenberg spacers and cannot prevent the pocket halves from collapsing toward each other and when the pocket sides are suddenly blown apart by an increased air velocity, those filamentary stays have a yanking effect with stress at their points of attachment to the filter pockets. (Reinhardt CX-63 at 5, 6).

236. In the testing Reinhardt took a Hi-Flo 95 as well as a T-90 out of the storage area and measured their rate. Then 500 grams dust was added for each filter and the tests carried out. (Reinhardt Tr. at 703, 704).

237. Respondents' Joachim Richter studied structural and civil engineering in a technical college in West Berlin, graduating in 1956, and then worked as an engineer until joining the Freudenberg company at the end of 1958. (Richter RTX-005 at 1).

238. While employed at Freudenberg, Richter and Kurt Huber, then head of the Viledon filter division, came up with a "basic idea" for a pocket filter to be made by Freudenberg's Viledon division, during a luncheon at the company cafeteria on May 10, 1973. Up until 1975 Viledon filter division produced only nonwoven filter material in rolls and square cuttings which was purchased by various filter companies which fabricated these media into pocket

filters. Richter testified that pocket filters were then and are now "state of the art", and that "the idea of ourselves producing pocket filters was an obvious one." He continued, saying:

> One particularly advantageous circumstance was the fact that polyurethane was processed in the Synthetic Materials Plant of the Carl Freudenberg company which, as we already knew from filter frame production at Noel, Marquet & Cie. (NMC), Eupen, Belgium, is well-suited for foaming nonwoven filter media. Our idea here was to foam the various individual filter bags according to [a] pocket filter type in a stabile polyurethane top-frame such that they would be mechanically sturdy and dust free, which was ultimately realized with success.
>
> After Mr. Rutsch of the CARL FREUDENBERG SYNTHETIC MATERIALS PLANT, with the understanding of Mr. Breham, then the head of the CF SYNTHETIC MATERIALS PLANT, had conducted several polyurethane foaming experiments with relevant nonwoven filtering media and the results appeared to be very positive, the technical divisions of the VILEDON PLANT, of the VILEDON filter division and of the SYNTHETIC MATERIALS PLANT were informed of the pocket filter idea and asked to draw up details for the production process.

(RTX-005 at 2-3).

239. Richter testified:

> The American patent specification no. 4,056,375 [the '375 patent] naturally involves the same pocket filter element described in the German master patent specification, no. 25 41 331 [priority application] of September 17, 1975. There was only one pocket filter development and only one pocket filter production, namely the one in Weinheim and on commission to the VILEDON filter division/Weinheim. In my opinion, differences in the text of the individual patent applications are based on the fact that the patent attorneys felt that one formulation or another was more understandable in their respective language, or that facts had emerged in the meantime that necessitated the addition or deletion of an entry. For example, NOEL, MARQUET & Cie (NMC), Eupen, Belgium, received the German patent for the polyurethane foaming of the filter mats under no. 2,166,433, so that in U.S. patent application no. 4,056,375, the foaming of filter bags into the polyurethane top-frames of the pocket filter was not included as a

268

> claim, since there were no longer any prospects for being granting the patent on this point.

(RTX-005 at 3, 4).

240. Referring to the "basic idea", Richter also testified:

> Q Mr. Richter, in terms of the development of the patented gas filters, will you please describe your contributions other than coming up with the basic idea with Mr. Huber that Freudenberg should produce gas filters using the non-woven material?
>
> A The development of the pocket filters took some time. Mr. Huber and I have had regular and frequent discussions in which all the persons participated from the various departments involved. And I am talking about the departments from the Viledon division as well as the synthetic plastic division.
>
> The various development phases were always talked about jointly and during these discussions, it was always determined which improvements could be made or it was discussed as to in which general direction one could proceed as far as the thought process in concerned.
>
> Mr. Huber and myself, we have participated in these discussions throughout this procedure and we have contributed recommendations as to we have recommendations or certain ideas that could be thought about.
>
> * * *
>
> JUDGE LUCKERN: Mr. Cockburn asked you some questions and he used the term, "basic idea," and you used your term -- this is your words. You used this term, "basic idea" in this paragraph 5 [Witness statement RTX-005]. And my question to you is: What do you mean by the term, "basis idea"?
>
> THE WITNESS: The situation was the following: The filter department of the Carl Freudenberg Company had produced materials for filter production for many years. That is to say the base material for such filters.
>
> And this base material was distributed at home and abroad and it came in big rolls or in cut sections. It was sold in rolls or in sections and sales were successful.

And then this material was supplied to a number of companies which made and produced pocket filters from this material that was provided to them by the Carl Freudenberg Company.

The idea then to produce such pocket filters ourselves within the Freudenberg Company was a logical one. And this is the idea that I had discussed repeatedly with Mr. Huber during this luncheon which I cited before which took place on the 10th of May 1973.

This is the idea that because of the structure of the Freudenberg Company, we thought that the company should be in a position to produce such filters on its own from the basic material that was already produced there.

In all these considerations, there was one very important and decisive aspect. And this is the fact that the pocket filters must be equipped with a top frame. And by that, I mean the frame which is located on the face part of the filter at the section of the filter where air would enter because at that point, the filters are put into the holding frames.

Normally, and the usual procedure was, at least until 1973, to make this frame out of metal. Since, however, the Freudenberg Company was not a metal processing company, the problem was that we were not in a position to produce such metal materials within the company.,

The idea then was the following: To replace the metal frame with a synthetic frame. This was in our opinion no problem for our company because the Freudenberg Company did have a synthetic plants division and within this division, synthetic materials had been produced for quite sometime which would be appropriate for this purpose.

The fact that it is possible to use such synthetic materials in order to form the frames for such filters was known to us. The NMC Company, this is the company, Noel Marquet & Cie located in Belgium had already for sometime such frames made out of foam in the marketplace.

However, these frames that I refer to here were not top frames for filter pockets, but these were frames for -- the German word is "plan (ph) filter." I assume it is flat filter. I stand to be corrected on that term.

THE TRANSLATOR: Should I ask the witness what he means? I do not quite understand this German word.

JUDGE LUCKERN: Yes.

(Translator complies.)

* * *

THE WITNESS: This, what I am holding in my hand here is a cut section of a filter mat [RTPX-002], mats such as they are used for base material for the production of filters.

* * *

THE WITNESS: If you now want to insert this filter mat as a flat filter, the way I am showing it here in a vertical or horizontal fashion, then this material is very unstable.

However, if I foam a synthetic framed through the material, itself, then I end up with a stable flat filter. Because the synthetic material frame keeps the filter in a stable fashion.

Such filters as I have just described framed with a synthetic material frame and flat had already been produced by the NMC Company in Belgium. And that was the basic idea that gave Mr. Huber and myself the idea, the initiative that we could now use such frames as I have described for pocket filters.

* * *

THE WITNESS: Yes. In this manner, then, the Freudenberg Company was in the position to produce filter pockets without having to produce the metal frame for such pocket filters.

Thus other than coming up with the basic idea with Huber that Freudenberg should produce gas filters using the non-woven material, Richter merely testified that the development of the filter took some time and that he and Huber had frequent discussions in which all persons participated from the Viledon and synthetic plastics division on the various development phases, with he and Huber contributing "recommendations" or "certain ideas" for joint discussion. (Tr. at 182-183). (Richter Tr. at 182 to 188).

241. Richter, regarding the "basic idea", also testified:

> I had already stated before that when I had this idea, together with Mr. Huber, pocket filters were a state of the art. Filter materials which were foamed with synthetic materials were also state of the art. And only the combination of these things presented a novelty. Mr. Huber and I at that time did not have the idea to patent this idea.
>
> But when details had to be worked out as far as this idea is concerned, there were, of course, a number of detailed questions that had to be resolved.
>
> MR. FELFE: "Problems," not "questions."
>
> JUDGE LUCKERN: "Problems"
>
> THE TRANSLATOR: Thank you. "Problems" is a better word.
>
> * * *
>
> THE INTERPRETER: The gentleman who were assigned to solve this task, the gentlemen from the technical department of the Viledon plant and the synthetic materials plant of the filter division, had to overcome problems.
>
> * * *
>
> THE WITNESS: Only when the filter was completed did all gentlemen or most of the gentlemen also express the desire to have this filter patented.
>
> JUDGE LUCKERN: That is his answer then?
>
> THE WITNESS: Mr. Huber and I in consultation with Mr. Farbach wanted to avoid that after the detailed work had been completed or after detailed problems had been solved by the gentlemen in the technical departments that we would claim the total idea for ourselves. That we wanted to avoid by this that others would feel disadvantages, and I think that we did achieve this.
>
> JUDGE LUCKERN: That is his answer?
>
> THE WITNESS: Yes.

(Richter Tr. at 190 to 192).

272

242. With respect to eight names on a Notification of Invention form, (CX-67, 67A), Ricther testified:

> Q What is the significance of these eight names in connection with possible patenting of the Viledon compact filters?
>
> A These were all gentlemen which at that time were very intensively working on the further development of this filter.
>
> Q Did you consider some of them to be potential co-inventors if a patent application were to be filed?
>
> A This would apply in any case to Mr. Huber.
>
> Q Who else?
>
> A The basic idea, namely to manufacture on behalf of the Freudenberg Company such filters with the base material which had for a long time been produced within the Freudenberg Company was an idea that initiated with Mr. Huber and myself. The other gentlemen were then asked to put this idea into practice.
>
> Q My question remains, Mr. Richter, were some of these other gentlemen who were involved in putting the idea into practice included here as possible co-inventors?
>
> A The question, and this is a question that I cannot answer, is which of these things that is incorporated in this filter were invented. The idea to manufacture such filters was the idea to manufacture it within the Freudenberg Company. To realize this idea and put it into practicer required expert knowledge as to the processing of materials.
>
> Q Mr. Richter, you stated that you are not a patent expert, correct?
>
> A Exactly.
>
> Q Does that mean that you left the decision as to who the proper co-inventors were to be to others?
>
> A Yes.
>
> Q Was the principal individual on whom you relied to make that determination Mr. Moldenhauer?

A No.

Q To whom did you go, or who was involved in making that decision?

A The head of the development department of the Viledon Plant of the Freudenberg Company, Dr. Farbach.

Q Was Dr. Farbach a high executive in the Freudenberg Company?

A He was the head of the development department of the Viledon Division.

Q Do you consider that a high position?

A Yes.

(Richter Tr. at 97, 98).

243. Richter testified that he and Huber decided, in part on the advice of a superior Dr. Farbach, the head of the Viledon filter development division, to take only a 5% share in the invention, even though Richter and Huber had had the basic idea for the filter and were "continually involved in the development of the pocket filter." Richter said that this was done in order to avoid resentment and the ill feelings generally associated with this on the part of the people in the technical divisions responsible for working out the details. He stated that he continued to receive royalties amounting to 5% up until the end of 1982 when the German Patent Office refused to recognize the patentability of the German parent application upon oppositions. (RTX-005 at 3-4).

244. Richter wrote a memorandum in which he stated that on June 27, 1985 Moldenhauer of the Patent Department [of Freudenberg] was asked for comments concerning whether and what patent application claims were possible for the "Viledon" compact filter. Moldenhauer, Freudenberg's patent expert,

274

was there requested to give a responsive memorandum with copies to Schlenzig, Schneider, Ringel, Burk, Rutsch, Kohl, Huber and Richter. Richter stated that he could not answer the question whether the others named, except for Huber, were co-inventors of the pocket filter. Richter testified that his approach to Moldenhauer on possible patenting was the result of a number of internal discussions, and was approved by Huber. Richter stated that the patenting process was not initiated solely by him. He stated that he had constant contact with Moldenhauer because of his involvement with Huber on another patent, and that there was a great deal of subsequent discussion regarding possible patenting of the Viledon compact filter. Richter stated that there were several proposals made for patenting, including Burk, Heuch, and Schneider, with coordinating discussions with Moldenhauer. (CX-66; Tr. at 90-978, 100).

245. Richter, Huber, the inventors named in the '375 patent, and others signed a document entitled "Notification of Invention In Accordance with Section 5 of the Law of Employee Inventions of July 25, 1957 (Accurate and Detailed Filling Out is Required)". Richter read and signed this document contemporaneously on September 15, 1975 and agreed with what was set forth in the document. (CX-67; CX-67A).

246. The Notification of Invention form states under paragraph 4 that it involves a technical task which came into being from directions by the main department of filter marketing concerning market requirements and sales possibilities. Paragraph 5 states that the invention's solution of the task came about as a result of internal discussions, in particular with concerned engineers of the departments of Plastic Works and Viledon Works II based on

the filter technology task posed. Concerning the type and scope of contribution of the individual inventors, the notification states that Schneider and Ringel contributed welding technology and processing of the filter media into pockets, and Rutsch and Kohl contributed casting in hard foam the holding frame. In the Notice Schneider is identified as a mechanical engineer, Ringel as a plastics engineer, Rutsch as a chemical engineer, and Kohl as an engineer. The Notice further under a subheading under paragraph 5 states:

> As agreed only Messrs. Schneider, Rutsch, Kohl and Ringel will be listed as inventors in the Patent Office.

The Notice additionally stated under that same subheading the following designation of inventors and percentage of their "inventive participation":

Schneider	15%
Ringel	20%
Rutsch	20%
Kohl	15%
Breham	5%
Burk	5%
Huber	5%
Dr. Hoffman	5%
Schlenzig	5%
Richter	5%

The Notice continues on under paragraph 6 to identify individuals cooperating in the working out of the invention, without contributing to the invention, including Burk and Dr. Hoffman. Hoffman and Burk signed the document, as well as Huber and Richter. (CX-67, 67A).

247. Richter testified that he has a consulting agreement with respondent Filtrair company which provides for the payment of monies in return for consultation services. Pursuant to this agreement Richter has been paid since January 1983 [ ]

[ ] and in total received approximately [ ] over this approximately five year period. The consulting agreement states that Richter and his consulting company will devote all its activities exclusively to the interest of respondents Filtrair, and will not make available its know hod in the filter business to others. The agreement further provides that Richter's company will carry out the tasks of Filtrair in such manner as if they were the tasks of Richter's own company. (CX-58; Tr. at 171-174).

248. Additionally, Richter's firm distributes the products of Filtrair Company, filter parts and pocket filters, to end user purchasers in Germany -- principally auto manufacturers -- from which he and his wife derive additional personal income. (Richter Tr. at 174; Borkent Dep. CPX-Z at 114-115).

249. After many years of service at Freudenberg, Richter's employment with Freudenberg was terminated by the company. Borkent testified:

> A Mr. Richter conveyed that he had been fired from his 23-year long job with Freudenberg & Company and was unemployed and looking for employment.
>
> Q Was he unhappy about having been, as you put it, fired?
>
> A I think anybody in this world is not happy when they are against their wishes told to leave.
>
> Q Did he express resentment against Freudenberg during this discussion?
>
> A For the fact of being fired? Yes.

(Borkent Dep. CPX-2 at 110, 111).

250. Herbert Moldenhauer of the Weinheim office of Firma Carl Freudenberg, complainant's German affiliate, testified on behalf of complainant at the hearing. Moldenhauer is the Deputy Head of the Patent Department and he has a degree as a professional engineer in addition to

training in German patent law, and was active in Freudenberg's industrial operations before entering the patent department. (CX-61).

251. As part of his duties Moldenhauer was responsible for filing the German priority patent application which was the parent application for the '375 U.S. patent. He was initially orally advised by Richter on June 27, 1975 that an invention had been made, and this was confirmed in writing by Richter. Initially the inventors were designated in Huber's memorandum as Schlenzig, Schneider, Ringel, Burk, Rutsch, Kohl, Huber, and Richter. Moldenhauer made an initial draft application and sent it on August 7, 1975 to those persons together with the printed company Invention Notification form. As part of Moldenhauer's initial discussions with Richter about a patent application, Moldenhauer emphasized the importance of careful completion of the invention notification form to have strong patent protection for the company. Mr. Burk revised Moldenhauer's draft application on August 22, 1975 and the Invention Notification form was signed by each of those originally designated as inventors and returned to Moldenhauer on September 16, 1975. In that Invention Notification form two additional persons, Brehm and Dr. Hoffman, were also named as 5% contributing inventors, however, under paragraph 6 of the form these persons were stated as not contributing inventively. Two others listed there as contributing 5%, Schlenzig and Breham, were supervisors with different responsibilities who did not actively work on the invention. Richter, responsible for sales at the Dusseldorf sales office, and Huber, the sales director, were also charged with different responsibilities than the technical development of the invention. (Moldenhauer CX-61 at 1-4; Moldenhauer Tr. at 620-622; 624-626).

252. As Moldenhauer testified, the sentence on the Invention Notification form under paragraph 5(d) stating that only Schneider, Rutsch, Kohl and Ringel will be listed as inventors in the Patent Office indicated that the persons indicated as 5% contributors, including Richter and Huber, were agreed by the signers of the form, including Moldenhauer and Richter, not to have inventively contributed to the subject matter claimed in the patent. As Moldenhauer testified, this was further confirmed in paragraph 5(c) of the form which only described the contributions of Schneider, Rutsch, Kohl and Ringel under the required description of the individual contributions of the inventors. As Moldenhauer testified, the additional persons named as 5% inventive contributors, including Richter and Huber, were listed on that form as the result of an internal agreement among all the persons identified on that form. Moldenhauer did not attribute the numerical percentage description of individual inventor contribution in this paragraph, this was done by agreement of the parties. He further noted that it is customary to assign claims to various persons, and that in this case neither Richter nor Huber associated any claims to themselves. (Moldenhauer CX-61; Moldenhauer Tr. at 595, 627-628).

253. Moldenhauer testified that he does personally know what specific ideas each of the named inventors actually contributed to the development of the Viledon compact filter, and that he did not believe it essential how much time an individual spends on a development, but the individual characteristics contributed by the person. He received this information from the named inventors themselves. Moldenhauer testified that one of his functions was to ensure that, when it came to notification of the patent office, the genuine inventors were named. (Moldenhauer Tr. at 597-598; 627-628).

254. Moldenhauer confirmed that Richter has been given a small payment designated as inventor compensation. Moldenhauer testified that normally Freudenberg does not pay compensation to employees in relation to patents who are not inventors of the patented device, but that in this case an exception was made due to the number of people involved who had gained a special merit related to this invention in the cooperation and coordination among the various different technical departments of the company, and the company did not have an official cooperative structure to deal with such inter-departmental development. Consequently, the company paid royalties or inventor compensation to the others listed on the form who enabled this cooperation in addition to the four true inventors. (Moldenhauer Tr. at 599-603; 611-612).

255. Moldenhauer admitted that Richter and Huber in 1973 had an original idea for a sales product to be created. However, he said that this basic idea was compared with the state of the art and it was adjudged not to have an excess of inventiveness over the then current state of the art. Moldenhauer attested that Richter's basic idea was that a pocket filter should be developed in which the filter mats would be very closely connected or attached to a top frame, with the frame directly attached to the mats. When Richter told Moldenhauer in 1975 about the invention to be the subject of a patent application, a complete product had been developed with additional characteristics compared to Richter's basic idea. Moldenhauer attested that Richter had told him that Richter did not have the technical knowledge to pursue such a development. Moldenhauer stated that Richter had told him then that Richter had participated in many discussions related to business type activities affecting the development of the pocket filter product. As

testified by Moldenhauer, Richter was not associated with and did not contribute any of the product characteristics listed in the patent beyond the basic idea. After two years of development work, others had contributed the spacers, the continuous peripheral weld along the outside edge, as well as the direct foaming in place of a grid like synthetic structure [frame] to the mouth of the individual pockets. (Moldenhauer Tr. at 613-618).

255a. Borkent testified that Filtrair's method of securing its plastic frame to the filter media by injection molding had been used by American Air Filter since the early 60's. He stated that "it is very known" and "it has no newness to it whatsoever." (Borkent CPX-2 at 75).

256. Richter testified at the hearing that at the time of his own actual contemporaneous agreement to the naming of only the four inventors that he was relying on others' decisions, i.e., relying on his superior Dr. Farbach, although he now feels that he and Huber should have correctly been named as inventors. He did not testify that he voiced any contemporaneous disagreement with this decision, or even that he, Huber, or others at Freudenberg contemporaneously believed that the inventors designated for the patent application did not correctly reflect the true inventorship. (CX-67; Moldenhauer Tr. at 613-618; Richter Tr. at 98).

257. Respondents' pocket filter models have been designated as "PPS/EU3" (green), "PPL/EU4" (green), "PFS/EU4" (white) and "PFL/EU5" (white). The depth of each of PPL/EU4 and PFL/EU5 is 24 inches while the depth of each of the others is 12 inches. (CX-12; CX-9).

258. Respondents promote their PPS/EU3, PPL/EU4, PFS/EU4 and PFL/EU5 to be of synthetic fiber media and self-supporting in the air stream. They are said to be thermally bonded with welded aerodynamic spacers with the front frame of corrosion resistant hard polyurethane foam and sealed to the pockets, excluding any air - leakage possibility. (CX-4; Cx-9).

259. Respondents offer for sale within the United States a line of nonwoven air filter products under the FILTRAIR trademark and model no. descriptions of PPS/EU4, PPL/EU4, PFS/EU5 and PFL/EU5. In the PPL/EU4 and PFL/EU5 models, internal spanners are heat sealed into position from the mouth of each air pocket. In the PPS/EU4 and PFS/EU5 models the sides of filter pockets are heat sealed together from the back of the pocket. The only model that has actually been sold, to date, with an internal spanner in the United States by respondents is the PFL/EU5 model. (CX-38 at 6, 7).

260. Respondents' specification to be used for their PFL/EU5 states that "each pocket shall be rigid enough to be self-supporting preventing it from sagging even when the airflow has been shut down". (CX-13).

261. Seams of the claimed pocket filter apparent in early "Viledon" literature indicate that early Freudenberg pocket filters had stiffening on the remaining wedge edges. (CX-15(a)).

262. Respondents' current literature (CX-9) and accused model CPX-1 show no stiffening on the remaining wedge edges.

263. Respondents' advertising leaflet shows that the Filtrair pocket filter model PPL/EU4 is made of nonwoven synthetic filter and conatin six pockets, has welded spacers, is self-supporting in the air stream, and has a polyurethane foamed frame sealed to the filter pockets. The green colored PPL/EU4 model is depicted on the left in the two pictures on the brochure with wedge shaped filter pockets and a central "thermally bonded" welded seam between the opposite wedge edge faces, as well as along the apparent back of the "cutting" wedge edge. As such the filter pockets are made from pocket halves. This establishes infringement of claim 1 by the PPL/EU4 model. The pockets have a plurality, three, of internal spacing elements within each

pocket which are spaced from the mouth and wedge edge, in accordance with claim 2. Claim 3 is satisfied in that the model is made of nonwoven fusible fiber with thermally bonded welded seams. The PPL/EU4 meets the limitations of claim 6 and 7 in that its spacers are pyramidal in shape and welded by heat sealing longitudinally to the opposite inclined wedge faces along opposite longitudinal edges of the pyramid, and there are additional stiffening lines along the outside of the wedge face in the direction of the internal attachment of the spacers to the wedge face. Pursuant to claim 8 the six pockets are held in relatively fixed position at the single holding frame made out of molded polyurethane plastic in which the open ends are bonded by a "hard foam frame sealed to the pockets", as stated in the brochure. Borkent's deposition testimony further establishes that the Filtrair pocket filters have frames which are molded by injection molding around the filter media fabric. Visual inspection establishes the essential structural similarity of the model PPL/EU4, depicted in the brochure, and PFL/EU5 (CPX-1). (CX-9; CPX-1; Borkent CPX-2 at 75).

CONCLUSIONS OF LAW

1. The Commission has _in rem_ jurisdiction and subject matter jurisdiction.

2. The Commission has _in personam_ jurisdiction over the respondents.

3. Claims 1 to 4 and 6 to 9 of the '375 patent are not invalid.

4. Claims 1 to 4 and 6 to 9 of the '375 patent are not unenforceable.

5. Complainant has sustained its burden in establishing that respondents infringe claims 1 to 3 and 6 to 8 of the '375 patent.

6. It is not inequitable to enforce complainant's '375 patent against respondents.

7. In view of the initial determination which issued on March 1, 1988, there is a violation of section 337.

INITIAL DETERMINATION AND ORDER

Based on the foregoing findings of fact, conclusions of law, the opinion, and the record as a whole, and having considered all of the pleadings and arguments presented orally and in briefs, as well as proposed findings of fact and the initial determination which issued on March 1, 1988, it is the administrative law judge's determination that there is a violation of section 337 in the unauthorized importation into, and sale in, the United States of certain nonwoven gas filter elements by reason of infringement of certain claims of the '375 patent with the effect and tendency to substantially injure an industry efficiently economically operated in the United States.

The administrative law judge hereby CERTIFIES to the Commission the initial determination, together with the record in this investigation consisting of the following:

1. The transcript of the hearing;
2. The Exhibits admitted into evidence and the Exhibits in which objections have been sustained; and

The pleadings of the parties are not certified, since they are already in the Commission's possession in accordance with Commission Rules of Practice and Procedure.

Further it is ORDERED that:

1. In accordance with Rule 210.44(b), all material heretofore marked in camera because of technical, business, financial, and marketing data found by the administrative law judge to be cognizable as confidential business information under Rule 201.6(a), is to be given in camera treatment continuing after the date this investigation is terminated.

2. Counsel for the parties shall have in the hands of the administrative law judge those portions of the initial determination which contain confidential business information to be deleted from the public version of the initial determination no later than Tuesday June 7, 1988. Such portions containing confidential information should be bracketed. If no comments are received from a party it will mean that the party has no objection in removing the confidential status, in its entirety, from this initial determination.

3. This initial determination shall become the determination of the Commission forty-five (45) days after the service thereof, unless the Commission, within forty-five (45) days after the date of filing of the initial determination shall have ordered review of the initial determination of certain issues therein pursuant to 19 C.F.R. 210.54(b) or 210.55 or by order shall have changed the effective date of the initial determination.

Paul J. Luckern

Paul J. Luckern
Administrative Law Judge

Issued: May 26, 1988

BEFORE THE
UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D. C.

In the Matter of)
)
CERTAIN NONWOVEN)
GAS FILTER ELEMENTS)

Investigation No.
337-TA-275

COMPLAINANT'S LIST OF DOCUMENTARY EXHIBITS*

EXHIBIT	TITLE	SPONSORING WITNESS
CX-1	Certified Copy of U.S. Patent No. 4,056,375	NONE
CX-2	Certified Assignments of U.S. Patent No. 4,056,375	NONE
CX-3	Certified Copy of Re-examination Certificate for U.S. Patent No. 4,056,375	NONE
CX-4	Advertising for Respondents' Filter	NONE
CX-5	Representative Advertisement for Viledon Filter	Janke
CX-6	Photograph of Respondents' Filter taken at International Air Conditioning, Heating, Refrigeration Exposition, New York City, January 21, 1987	NONE
CX-7	Photograph of Complainant's Hopkinsville, Kentucky filter Assembly Facility	Janke
CX-8	Technical Bulletin for Viledon Filter	Janke

---

* All Exhibits listed herein except CX-79 were admitted into evidence.

EXHIBIT	TITLE	SPONSORING WITNESS
CX-9	Filtrair Advertisement and Technical Brochure	NONE
CX-10	Filtrair Advertisement and Technical Brochure	NONE
CX-11	Filtrair Comparative Filter Technical Data	NONE
CX-12	Technical Data and Price List Filtrair Pocket filter Models	NONE
CX-13	Filtrair Specifications to be used for Medium Efficiency Pocket Filter	NONE
CX-14	Filtrair Comparative Filter Technical Data	NONE
CX-15	Brochure Viledon Compact Filter Bag Unit	Janke
CX-15(a)	Brochure Viledon Compact Filter Bag Unit	
CX-15(b)	Brochure Viledon Compact Filter Bag Unit	
CX-16	Brochure Viledon Air-Filter Range Summary	Janke
CX-17	General Survey Viledon Air Filters	Janke
CX-18	Brochure Viledon Compact Filter Bag Unit	Janke
CX-19	List of Exhibitors Frankfurt Fair March 1975 with English Translation	NONE
CX-20C	Withdrawn	
CX-21C	Withdrawn	
CX-22C	Withdrawn	
CX-23C	Withdrawn	

EXHIBIT	TITLE	SPONSORING WITNESS
CX-24C	Withdrawn	
CX-25C	Withdrawn	
CX-26C	Withdrawn	
CX-27	Withdrawn	
CX-28C	Withdrawn	
CX-29C	Withdrawn	
CX-30C	Withdrawn	
CX-31C	Withdrawn	
CX-32C	Withdrawn	
CX-33C	Withdrawn	
CX-34C	Withdrawn	
CX-35C	Withdrawn	
CX-36	Responses by Filtrair, B.V. and APB Corporation to the First Set of Interrogatories from the Commission Investigative Staff of the United States International Trade Commission	NONE
CX-37	Responses by Filtrair, B.V. and APB Corporation to the First Request for Production of Documents from Complainant Freudenberg Nonwovens Limited Partnership	NONE
CX-38	Responses by Filtrair, B.V. and APB Corporation to the First Set of Interrogatories from Complainant Freudenberg Nonwovens Limited Partnership	NONE
CX-39	Responses by Filtrair, B.V. and APB Corporation to the Second Set of Interrogatories from Complainant Freudenberg Nonwovens Limited Partnership	NONE

EXHIBIT	TITLE	SPONSORING WITNESS
CX-40C	Withdrawn	
CX-41C	Withdrawn	
CX-42C	Withdrawn	
CX-43C	Withdrawn	
CX-44C	Withdrawn	
CX-45C	Witness Statement of Frank H. Janke	Janke
CX-46	Stipulation re the coverage of the claims of U.S. Patent No. 4,056,375	NONE

COMPLAINANT'S LIST OF DOCUMENTARY REBUTTAL EXHIBITS

EXHIBIT	TITLE	SPONSORING WITNESS
CX-47	U.S. Patent No. 3,576,095 Richard D. Rivers, Issued April 27, 1971	NONE
CX-48	U.S. Patent No. 3,576,096 Richard D. Rivers, Issued April 27, 1971	NONE
CX-49	U.S. Patent No. 3,460,322 Rivers et al, Issued August 12, 1969	NONE
CX-50	U.S. Patent No. 3,590,562 Byers et al, Issued July 6, 1971	NONE
CX-51	U.S. Patent No. 4,687,579 Werner Bergman, Issued August 18, 1987	Bergman
CX-52	U.S. Patent No. 4,523,365 Werner Bergman, Issued November 18, 1986	Bergman

EXHIBIT	TITLE	SPONSORING WITNESS
CX-53	U.S. Patent No. 4,581,046 Werner Bergman, Issued April 8, 1986	Bergman
CX-54	U.S. Patent No. 4,405,342 Werner Bergman, Issued September 20, 1983	Bergman
CX-55	Withdrawn	
CX-56	Curriculum Vitae Werner Bergman	Bergman
CX-57	Offenlegungsschrift DE 36 15 484 dated November 12, 1987 and English language translation	NONE
CX-58C	Beratungsvertrag - Consulting Agreement between Filtrair BV and Joachim Richter GmbH (in original German and English language translation)	NONE
CX-59	Witness Statement of Werner Bergman	Bergman
CX-60	Withdrawn	
CX-61	Witness Statement of Herbert Moldenhauer	Moldenhauer
CX-62	Witness Statement of Dieter Gsell	Gsell
CX-63	Witness Statement of Heinz Reinhardt	Reinhardt
CX-64	List of Exhibitors Frankfurt Fair, March 23-27, 1977 (with translation)	Gsell
CX-65	Price List, Viledon Filters November 1975 with English Translation	Gsell
CX-66	Memorandum of June 27, 1975 re possible patent application (with translation)	Moldenhauer
CX-67	Invention Notification (with translation)	Moldenhauer

EXHIBIT	TITLE	SPONSORING WITNESS
CX-67(a)	Invention Notification	Moldenhauer
CX-67(b)	Invention Notification	
CX-68	Draft Patent application (with translation)	Moldenhauer
CX-69	List of Patents	Moldenhauer
CX-70	German Priority Application (with translation)	Moldenhauer
CX-71	Farr Brochure	NONE
CX-72	Cambridge Hi-Flo Brochure same as RTX-012d	Bauder
CX-73	Cambridge Hi-Cap Brochure same as RTX-012mm	Bauder
CX-74	Cambridge Hi-Flo Brochure	Bauder
CX-75	AAF - Brochure - Dri-Pak (1976)	Rivers
CX-76	AAF - Brochure - Dri-Pak U-Channel Header	Rivers
CX-77	Servodyne Brochure	Rivers
CX-78	Continental Brochure	Rivers
CX-79	U.S. Patent No. 4,356,011 (offered into evidence, not admitted)	

Respectfully submitted,

F. David Foster

F. David Foster
ABLONDI & FOSTER, P.C.
1776 "K" Street, N.W.
Washington, D. C., 20006
(202) 296-3355

FELFE & LYNCH
805 Third Avenue
New York, New York 10022
(212) 688-9200

April 12, 1988

ATTORNEYS FOR COMPLAINANT

BEFORE THE
UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D. C.

In the Matter of CERTAIN NONWOVEN GAS FILTER ELEMENTS	Investigation No. 337-TA-275

COMPLAINANT'S LIST OF PHYSICAL AND DEMONSTRATIVE EXHIBITS

EXHIBIT	TITLE	SPONSORING WITNESS
CPX-1	Filtrair Filter - Model PFL/EU5 (This physical exhibit was initially submitted to the Commission as Physical Exhibit B to the Complaint)	NONE
CPX-2C	Deposition of Peter Borkent	NONE
CPX-3	Ribbon copy of file history of U.S. Patent No. 4,056,375 (Appendix A to the Complaint)	NONE
CPX-4	Ribbon copy of Reexamination Request No. 90/001,035 (Appendix B to the Complaint)	NONE
CPX-5	Sample of Complainant's Gas Filter Element, Model F-45	Janke
CPX-6	Withdrawn	
CPX-7	Withdrawn	

COMPLAINANT'S LIST OF PHYSICAL AND DEMONSTRATIVE REBUTTAL EXHIBITS

EXHIBIT	TITLE	SPONSORING WITNESS
CPX-8	Video showing comparison of Hi-Flo filter with Freudenberg T Model filter in operation	Reinhardt
CPX-9	Continental Wire frame	Bergman
CPX-9(a)	Filter media (without wire frame)	
CPX-10	Pocket filter of tube construction as described in Rivers '154 (RTX 011) AAF-Filter	Bergman
CPX-11	Cambridge Hi-Flo Filter (Yellow)	Bergman
CPX-11(a)	Cambridge Hi-Flo Filter (Green)	

Respectfully submitted,

F. David Foster

F. David Foster
ABLONDI & FOSTER, P.C.
1776 "K" Street, N.W.
Washington, D. C., 20006
(202) 296-3355

FELFE & LYNCH
805 Third Avenue
New York, New York 10022
(212) 688-9200

April 12, 1988

ATTORNEYS FOR COMPLAINANT

UNITED STATES INTERNATIONAL TRADE COMMISSION

Washington, D.C.

In the Matter of

CERTAIN NONWOVEN
GAS FILTER ELEMENTS

Investigation No.
337-TA-275

RESPONDENTS' DESIGNATION OF EXHIBITS

RTX-001 - Witness statement of Carl J. Bauder filed on behalf of Respondents Filtrair, bv and APB Corporation. **ADMITTED**

RTX-002 - Witness statement of Richard D. Rivers filed on behalf of Respondents Filtrair, bv and APB Corporation. **ADMITTED**

RTX-003 - Witness statement of Paul Eilbracht filed on behalf of Respondents Filtrair, bv and APB Corporation. **NOT ADMITTED**

RTX-004 - Witness statement of Pieter K. Borkent filed on behalf of Respondents Filtrair, bv and APB Corporation. **ADMITTED**

RTX-005 - Witness statement of Joachim Richter filed on behalf of Respondents Filtrair, bv and APB Corporation. **ADMITTED**

RTX-005a - Supplemental witness statement of Joachim Richter. **ADMITTED**

BEST COPY AVAILABLE

RTX-006 - A Freudenberg product brochure entitled *Viledon Compact Filter Bag Unit* depicting the Viledon Compact "Fein" and the Viledon Compact "Grob" Filters. **ADMITTED**

RTX-007 - United States Patent Number 3,190,059 to C. J. Bauder, et al. **ADMITTED**

RTX-008 - United States Patent Number 3,273,321 to C. J. Bauder, et al. **ADMITTED**

RTX-009 - United States Patent Number 3,485,694 to C. J. Bauder, et al. **ADMITTED**

RTX-010 - Four sheets of engineering specifications from the American Air Filter Company disclosing the construction of the Model 2540 and 2530 Dri-Pak Air Filters. **ADMITTED**

RTX-011 - United States Patent Number 2,853,154 to Richard D. Rivers. **ADMITTED**

RTX-012 - Respondents Notice of Prior Art submitted pursuant to 35 U.S.C.§282. **ADMITTED**

RTX-012a - A September 1975 article from *Industrie-Lackier-Betreib* entitled "Staubfrei Lackieren". **ADMITTED**

RTX-012b - A brochure entitled "VILEDON COMPACT FILTER BAG UNIT", designated by Respondent Document No. 2284 *et seq*. **ADMITTED**

RTX-012c - A brochure, Bulletin 215B from the American Air Filter Co., Inc., entitled "Dri-Pak", Copyright 1971. **ADMITTED**

RTX-012d - A brochure from the Cambridge Filter Corporation, entitled "HI-FLO, Aerosolv Air Filters". **ADMITTED**

BEST COPY AVAILABLE

RTX-012e - A brochure from the Rockwell Standard Corporation, entitled "MICRO-MAZE High Efficiency Extended Area Filters", dated January 15, 1967. ADMITTED

RTX-012f - A section of the Ashrae Handbook & Product Directory 1976 Systems depicting advertisements for the Farr Company, and the American Air Filter Company. ADMITTED

RTX-012g - Product Bulletin Hi-Cap 90/35 and Hi-Cap 80/25, Camfil GMbH (1978). NOT ADMITTED

RTX-012h - U.S. Patent No. 3,386,231 ADMITTED

RTX-012i - U.S. Patent No. 3,422,602 ADMITTED

RTX-012l - German Utility Model 17 00 147 NOT ADMITTED

RTX-012m - German Patent Application DE-OS 16 07 665 NOT ADMITTED

RTX-012n - German Patent Application DE-OS 14 32 013. NOT ADMITTED

RTX-012o - French Patent 12 96 701. ADMITTED

RTX-012p - German Patent Application DE-OS 21 66 432. NOT ADMITTED

RTX-012q - German Patent Application DE-OS 21 37 309. NOT ADMITTED

RTX-012r - U.S. Patent No. 3,183,285. ADMITTED

RTX-012s - German Utility Model 71 40 425. NOT ADMITTED

RTX-012t - French Patent 15 09 054. NOT ADMITTED

BEST COPY AVAILABLE

RTX-012u - German Patent Application DE-OS 21 04 675. **NOT ADMITTED**

RTX-012v - German Utility Model 19 44 619. **NOT ADMITTED**

RTX-012w - U.S. Patent No. 1,363,753. **ADMITTED**

RTX-012x - U.S. Patent No. 2,364,069. **ADMITTED**

RTX-012y - Canadian Patent 599,661. **ADMITTED**

RTX-012z - U.S. Patent No. 2,569,243. **ADMITTED**

RTX-012aa - German Utility Model 17 28 676. **NOT ADMITTED**

RTX-012bb - German Patent Application DE-OS 23 43 435. **NOT ADMITTED**

RTX-012cc - British Patent 806 109. **ADMITTED**

RTX-012dd - U.S. Patent No. 2,853,154. **ADMITTED**

RTX-012ee - U.S. Patent No. 3,099,547. **ADMITTED**

RTX-012ff - U.S. Patent No. 3,360,120. **ADMITTED**

RTX-012hh - German Utility Model 17 31 352 **NOT ADMITTED**

RTX-012ii - German Patent No. 6908374 **NOT ADMITTED**

RTX-012jj - German Patent No. 1407932. **NOT ADMITTED**

RTX-012kk - French Patent No. 2201111. **ADMITTED**

BEST COPY AVAILABLE

RTX-01211 - Britain Patent No. 1367226. ADMITTED

RTX-012mm - Hi-Cap Product Bulletin 150A (1963). ADMITTED

RTX-013 - Non-confidential parts of Complainant Freudenburg Nonwovens Limited Partnership's Response to Respondent's First Request for Admissions, Interrogatories and Document Requests. ADMITTED

RTX-014 - A certified translation of a decision issued by the German Patent Office on August 4th, 1983, entitled In re P2541331.4-27/Carl Freudenburg and an attached copy of the Freudenburg patent which was overturned by the German Patent Authority. ADMITTED

RTX-015 - United States Patent Number 3,873,286 to Oscar A. Wurtenberg entitled "Gas Filter Assembly". ADMITTED

RTX-016 - Application file history of U.S. Patent 4,056,375 to Ringel et al. ADMITTED

RTX-017 - Reexamination file history of U.S. Patent 4,056,375 which matured into Certificate B1 4,056,375. ADMITTED

RTX-018 - Viledon filter specification data sheet, March 1975. ADMITTED

RTX-019 - Sales brochure advertising the Viledon compact filter. ADMITTED

RTX-020 - Sales brochure advertising a Viledon compact filter, Model F-45. NOT ADMITTED

RTX-021 - Sales brochure advertising a Viledon compact filter, Model G-35. NOT ADMITTED

BEST COPY AVAILABLE

RTX-022 - Sales brochure advertising a Viledon compact filter, Model G-35/K. **NOT ADMITTED**

RPTX-001 - Freudenberg air filter Model MF-85. **ADMITTED**

Respectfully submitted,

John J. Byrne
Bradford E. Kile
John W. Polk
Kevin M. O'Brien
Baker & McKenzie
815 Connecticut Avenue, N.W.
Washington, D.C. 20006
(202) 298-8290

Counsel for Filtrair, B.V.
and APB Corporation

BEST COPY AVAILABLE

CERTIFICATE OF SERVICE

I, John W. Polk, an attorney with the firm of Baker & McKenzie, with offices located at 815 Connecticut Avenue, N.W., Washington, D.C. 20006-4078, hereby certify that on the 12th day of April, 1988, I served a copy of Respondents' Designation of Exhibits on the following by the technique indicated as follows:

BY HAND

Honorable Paul J. Luckern
Administrative Law Judge
United States International
Trade Commission
500 E Street, S.W., Room 213
Washington, D.C. 20436 (two copies)

Juan Cockburn, Esq.
Office of Unfair Import
Investigations
United States International
Trade Commission
500 E Street, N.W. Room 400
Washington, D.C. 20436

David Foster, Esq.
Albondi & Foster, P.C.
1776 K Street, N.W.
Washington, D.C. 20006
Counsel for Complainant

BY FEDERAL EXPRESS

Peter Felfe, Esq.
Felfe & Lynch
805 Third Avenue
New York, N.Y. 10022
Counsel for Complainant

John W. Polk

John W. Polk

BEST COPY AVAILABLE

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.
Before Paul J. Luckern
Administrative Law Judge

In the Matter of)
)
CERTAIN NONWOVEN GAS FILTER) Inv. No. 337-TA-275
ELEMENTS)
)

DIRECT EXHIBIT LIST OF THE COMMISSION INVESTIGATIVE STAFF

SX 1C. Complainant's Response to Staff's First Set of Interrogatories. (CONFIDENTIAL)

SX 2C. Complainant's Response to Staff's Second Set of Interrogatories. (CONFIDENTIAL)

CONFIDENTIAL BUSINESS INFORMATION

CONFIDENTIAL BUSINESS [illegible]

CONFIDENTIAL BUSINESS [illegible]

BEST COPY AVAILABLE

UNITED STATES INTERNATIONAL TRADE COMMISSION

Washington, D.C.

In the Matter of CERTAIN NONWOVEN GAS FILTER ELEMENTS	)	Investigation No. 337-TA-275

RESPONDENTS' SUPPLEMENTAL DESIGNATION OF EXHIBITS

Respondents supplement their previously filed Designation Of Exhibits with the following exhibit that was inadvertantly omitted from our previously filing. Although this exhibit was not admitted into evidence, it should have been listed on respondents Designation Of Exhibits.

RTX-005b - Supplemental witness statement of Joachim Richter, unexpunged version. **NOT ADMITTED**

Respectfully submitted,

Counsel For Respondents

John W. Polk

John W. Polk

Baker & McKenzie
815 Connecticut Avenue, N.W.
Washington, D.C. 20006-4078
(202) 298-8290

BEST COPY AVAILABLE

CERTIFICATE OF SERVICE

I, John W. Polk, an attorney with the firm of Baker & McKenzie, with offices located at 815 Connecticut Avenue, N.W., Washington, D.C. 20006-4078, hereby certify that on the 4th day of May, 1988, I served a copy of the Respondents' Supplemental Designation of Exhibits on the following by mail.

Honorable Kenneth R. Mason
Secretary
United States International
Trade Commission
500 E Street, S.W.
Washington, D.C. 20436
(six copies)

Honorable Paul J. Luckern
Administrative Law Judge
United States International
Trade Commission
500 E Street, S.W.
Washington, D.C. 20436
(two copies)

Juan Cockburn, Esq.
Office of Unfair Import
Investigations
United States International
Trade Commission
500 E Street, S.W.
Suite 400
Washington, D.C. 20436

David Foster, Esq.
Albondi & Foster, P.C.
1776 K Street, N.W.
Washington, D.C. 20006
Counsel for Complainant

Peter Felfe
Felfe & Lynch
805 Third Avenue
New York, New York 10022
Counsel for Complainant

John W. Polk
John W. Polk, Esq.

Certain Gas Filter Elements, Inv. No. 337-TA-275

ALJ Exhibit List

ALJX-1	Statement of Rosenbaum-Fickau Translator	Admitted

CERTAIN NONWOVEN GAS FILTER ELEMENTS 337-TA-275

CERTIFICATE OF SERVICE

I, Kenneth R. Mason, hereby certify that the attached (Public Version) Initial Determination was served upon Juan Cockburn, Esq., and upon the following parties via first class mail, and air mail where necessary, on June 15, 1988.

Kenneth R. Mason, Secretary
U.S. International Trade Commission
500 E Street, S.W.
Washington, D.C.

FOR COMPLAINANT: FREUDENBERG NONWOVENS LIMITED PARTNERSHIP

Italo H. Ablondi
F. David Foster
ABLONDI & FOSTER, P.C.
1776 K Street, N.W.
Washington, D.C. 20006

Stephen B. Shear
Peter F. Felfe
FELFE & LYNCH
805 Third Avenue
New York, N.Y. 10022

FOR RESPONDENTS: FILTRAIR B.V. & APB CORPORATION

John J. Byrne
John W. Polk
Bradford E. Kile
Kevin M. O'Brien
Francisco J. Cimadevilla
BAKER & MCKENZIE
815 Connecticut Avenue, N.W.
Washington, D.C. 20006

GOVERNMENT AGENCIES:

Mr. Charles S. Stark
Antitrust Div./U.S. Dept of Justice
Room 7115, Main Justice
Pennsylvania Avenue & Tenth Street, N.W.
Washington, D.C. 20530

Edward F. Glynn, Jr., Esq.
Assistant Director(International)
Bureau of Competition
Federal Trade Commission
Room 2636
601 Pennsylvania Avenue, N.W.
Washington, D.C. 20580

Darrel J. Grinstead, Esq.
Dept of Health and Human Svcs.
Room 5362, North Building
330 Independence Avenue, S.W.
Washington, D.C. 20201

Michael T. Schmitz
Chief Counsel
U.S. Customs Service
1301 Constitution Avenue, N.W.
Washington, D.C. 20229

Order No. 13: Initial Determination Granting Complainant's Motion for Summary Determination on the Economic Issues (Public Version)

By virtue of the Commission's decision not to review the attached initial determination, it became the final determination of the Commission concerning the economic issues presented in the subject investigation. See 19 C.F.R. § 210.53(h); 53 Fed. Reg. 27408 (June 20, 1988).

PUBLIC VERSION
UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

In the Matter of)
)
CERTAIN NONWOVEN GAS FILTER) Investigation No. 337-TA-275
ELEMENTS)
)

Order No. 13: Initial Determination Granting Complainant's Motion for Summary Determination on the Economic Issues

On February 5, 1988 complainant filed a motion for summary determination, pursuant to 19 C.F.R. 210.50, on the ground that respondents' complained of activities have the effect or tendency to destroy or substantially injure an industry efficiently and economically operated in the United States (Motion Docket No. 275-4). Attachments to Motion No. 275-4 include three affidavits, some discovery responses from respondents, excerpts from the deposition of respondent's principal Pieter Borkent and respondents' sales invoices.

Complainant argues that respondents' have declined, in their response to the complaint, to contest the economic matters at issue in its motion and thus have already conceded them. It is argued that "[s]subsequently", respondents have given only limited discovery with respect to the economic issues.

Respondents Filtrair, BV and APB Corporation, filed a response to Motion No. 275-4 in which it was merely stated that they "take no position as to this motion."

Respondents in prior submissions have taken the position that although they generally deny complainant's allegations, because of resource limitations they will not contest the economic issues in this litigation and will leave

BEST COPY AVAILABLE

complainant to its proof. In their response to the complaint and notice of investigation respondents initially stated that they were neither admitting or denying any fact in connection with economic injury allegations. However the respondents went on in their response to generally deny the allegations of virtually each paragraph of the complaint.[1/] Thus respondents in their response thereby put in issue the matter of economic injury, leaving complainant to its proof and respondents subject to discovery on the still material economic issues. However respondents failed to provide the discovery the staff had requested on the economic issues. Noting that by their response to the Complaint and Notice of Investigation that respondents had put these matters at issue, the administrative law judge granted in Order No. 7 the staff's Motion To Compel (Motion No. 275-3), ordering respondents to provide the requested discovery to the staff by January 5, 1988 and ordering respondents to submit a letter to the administrative judge by that date stating their intention on compliance with the order compelling discovery. No such letter was submitted by respondents. Respondents however did not amend their response to the Complaint and Notice of Investigation to admit effectively the economic issues, and failed to state any consistent intention to admit the economic allegations and remove those matters from issue.

[1/] Under Commission rule 210.21(b) and analogous federal practice FRCP 8(d) & (e), a failure to admit or deny complainant's allegations may effectively result in factual and legal admissions as to those allegations. Thus 19 CFR 210.21(b) states that there shall be a specific admission, denial, or explanation of each fact alleged in the complaint and notice, or if the respondent is without knowledge of any such fact, a statement to that effect and that allegations of a complaint and notice not thus answered may be deemed to be admitted.

The staff, attaching additional documentation to its response, supports complainant's Motion No. 275-4 on the economic issues, arguing that the affidavits and attached exhibits adequately support the existence of a domestic industry, its efficient and economic operation, and the tendency to injure. Additionally, on the issue of an injurious effect the staff proposes adverse inferences as sanctions for respondents' failure to provide requested discovery and argues that with those inferences judgement in favor of complainant is justified.

Summary determination is available under Commission rule 210.50(b). Thus it is stated:

> The determination sought by the moving party shall be rendered if the pleadings and any depositions, admissions on file, affidavits [and other evidence] show that there is no genuine issue as to any material fact and that the moving party is entitled to a summary determination as a matter of law.

The Commission rule further requires some contrary factual showing to contest the facts alleged in support of a properly supported motion for summary determination, 210.50(c):

> When a motion for summary determination is made and supported as provided in this rule, a party opposing the motion may not rest upon mere allegations or denials in his pleading: his response, by affidavits or as otherwise provided in this rule, must set forth specific facts showing that there is a genuine issue of fact for hearing. If no such response is filed, a summary determination, if appropriate, shall be rendered.

However, this same rule indicates by implication that the facts alleged must be "appropriate" for summary determination of the issues presented. However because the facts cited by the complainant and staff are uncontested with no contrary facts asserted they may be considered established for the purposes of this summary determination motion.

I. The Existence of an Efficiently and Economically Operated Domestic Industry

In patent-based investigations under section 337 a domestic industry exists if there are domestic production related activities devoted to the claimed invention. In re Reclosable Plastic Bags, 192 USPQ 674, 680 (Comm. 1977. When a portion of the production of the subject product occurs offshore, the existence of a domestic industry must be determined according to an assessment of the nature and relative significance or value added by the domestic activities as a percentage of the product's total value. Certain Cube Puzzles, 219 U.S.P.Q. 322, 334-5 (Comm. 1982). Factors relevant to the efficient and economic operation of a domestic industry include the following: use of modern equipment and manufacturing facilities; constant upgrading of manufacturing equipment; employee incentive benefit programs; sustained profitable operation; investment in research and development; effective quality control programs; substantial expenditures in advertising, promotion, and development of consumer goodwill, among others. Certain Methods for Extruding Plastic Tubing, 218 USPQ 348 (Comm. 1982); Certain Caulking Guns, 223 USPQ 338 (Comm. 1984).

It is uncontested that complainant presently manufacture and sell in the United States nonwoven gas filters elements, also referred to as pocket filters. The pocket filters are manufactured in complainant's Hopkinsville, Kentucky facility and are sold under the Viledon trademark and model designations F-45, T-60, and MF-85, MF-90, MF-95 (Motion, Ex. 1-3). Complainant began domestic production of such pocket filters in November, 1986, and since it maintained a inventory supply of filters, sales of domestically produced filters began in early 1987. The 1987 sales volume consisted overwhelmingly of domestically produced Viledon filters (Motion, Ex. 1 at 2-3). Previously the Viledon pocket filters were produced in West Germany and distributed in the U.S. by Eaton Products International (Eaton) of Birmingham, Michigan since the early 1980's. Id. Importation of Viledon filters ceased in late 1986. Id. Complainant acquired the distribution organization of Eaton by purchase in early 1987 and this distribution is now known as the Viledon division of complainant. Id.

Complainant and respondents in a stipulation served on Feb. 24, 1988 have stipulated and mutually agreed that claims 1, 2, 3, 4, 6, 7, 8 and 9 of the sole patent in issue read upon complainant's "F-45, T-60, and MF-85, 90, 95 gas filter elements ... 2/3/4/ Two of the Viledon model filters,

---

2/ According to the notice of investigation the alleged unlawful importation consists of "importation of certain nonwoven gas filter elements into the United States, or in their sale, by reason of alleged infringement of claims 1, 2, 3, 4, 7, 8 or 9 of U.S. Letters Patent 4,056,375." However it is the understanding of the parties that claims 1, 2, 3, 4, 7, 8 and 9 of said patent are in issue. (Prehearing Tr. at at 6 to 9).

3/ The administrative law judge notes that the staff by regulation has the complete rights of a party litigant in this investigation, 19 CFR 210.4(b), and that the staff has not expressly joined in the stipulation which was served after the submission of the staff response. However, the staff in this investigation has taken a position in favor of Motion No. 275-4 and the existence of a domestic industry and has been served with a copy of the stipulation. Moreover the stipulation is found to be fully consistent with the staff's position. Consequently, the stipulation is found effective and binding in this investigation.

4/ Injury under section 337 in this investigation is premised upon the importation or sale of products infringing a valid patent. Infringement by respondents' air filters of a valid patent has not been stipulated or admitted, and has not been shown of record by probative evidence. The parties' submissions on this motion for summary determination appear to leave the question of any infringement and validity and/or enforceability for determination at the hearing. Accordingly the administrative law judge will

(Footnote continued to page 6)

the F-45 and T-60, are manufactured from 100% U.S. procured components, and have been since early 1987 (Motion, Ex. 2 at 2). The three MF models are, and have been, wholly assembled in the Kentucky facility since 1987, while the fiber mat used in those filters has previously been imported from West Germany. Id. Importation of this mat component has only recently ceased and equipment has recently been installed in the Kentucky facility to allow domestic manufacture of the mat component. Id. After consumption of a small inventory of imported mats is completed, the Viledon product line will use 100% domestically produced components. Taking into account value added by U.S. labor, factory overhead, and sales expenses, but excluding general and administrative expenses and interest expenses, corporate level expenses, and other non-production related expenses, the imported fiber mat component for the MF model filters constitutes less than % of the U.S. value added. Id.

Complainant's production plant in Kentucky was expanded in 1986-1987, with 60,000 square feet dedicated to manufacture of the Viledon gas filter elements, and the expansion involving a capital investment of about dollars (Motion, Ex. 2 at 2, Ex. 3 at 1). Viledon filter production added approximately 20 new production employees at this facility (Motion, Ex. 3 at 1). Complainant employs domestically 45 workers involved in operations directly involved in the manufacture, distribution and sale of Viledon gas

---

(Footnote continued from page 5)
proceed to consider separately now the issues of economic injury premised on the assumption of validity, enforceability, and infringement. The hearing in this investigation is scheduled to commence on March 7, 1988. The record is to be certified to the Commission, on the requested relief, no later than May 26, 1988.

filters, with 30 employees in manufacturing and 7 in product development and technical services (Motion, Ex. 2 at 3). Complainant's Kentucky plant employs one filter test engineer, and one quality assurance manager supervising four technicians who devote a substantial amount of their time to quality assurance procedures (Motion, Ex. 3 at 3). Additionally, 35 domestic Viledon Division employees are involved directly in the assembly, storage, distribution and sale of Viledon gas filters (Motion, Ex. 2 at 3.) The Viledon Division, formerly Eaton, sells to 50 independent sales agents in the U.S. employing approximately 200 sales personnel. (Motion, Ex. 1 at 3). Marketing activity includes both selling and product support services such as testing and product development. Id.

Based on the foregoing, the administrative law judge finds, pursuant to Commission rule 210.50 that, there has existed a domestic industry devoted to the exploration of claims 1, 2, 3, 4, 6, 7, 8 and 9 of the patent at issue since late 1986 and that the domestic industry is efficiently and economically operated, as evidenced by modern facilities representing a substantial investment in production, by an extensive sales, distribution and technical services operation, and by quality assurance programs.

II. Importation and Sale of Respondents' Gas Filters

Importation to and sale in the United States of respondents' gas filters are shown by discovery responses (Motion, Ex. 6 at 21-26). Additionally, by their response to the complaint and notice respondents admitted that respondent Filtrair, B.V., a Netherlands company, manufactures pocket air filters there, and offers those air filters for sale in the U.S. through respondent APB Corporation, a Delaware based importer of Filtrair's air filters (Response at 5, paragraphs 12, 13 & 22).

III. Substantial Injury to the Domestic Industry from Importation or Sale

In patent-based section 337 investigations the requisite effect or tendency to substantially injure a domestic industry is not established merely by the importation and sale of infringing products. Apart from the issue of infringement of a valid patent which is a use of the claimed invention legally entitling a patentee to reasonable royalties therefor, other economic injury or probable future economic injury to the domestic industry must be established by substantial evidence. While the quantum of economic injury required is less in intellectual property investigations than in other actions, the economic effects of the respondents' unfair acts must be both substantial in degree and shown to result from the infringing imports at issue. Corning Glass Works v. International Trade Commission, 799 F.2d 1559, 230 USPQ 822, 828 (Fed. Cir. 1986). The question of substantial injury is highly dependent upon the particular facts under consideration in each different investigation. Id. at 828.

A) The Effect to Substantially Injure the Domestic Industry

Factors relevant to a determination of the effect to substantially injure a domestic industry include, but are not limited to: lost sales; shifts in market share; declining sales; declining profits; declining employment; underselling in price; relative volume of imports in the domestic market; decreased domestic employment; increased domestic excess capacity; and the presence of non-infringing substitutes or non-imported substitutes in the market for the articles at issue. Certain Vertical Milling Machines, 223 USPQ 332,348 (Comm. 1984).

The staff requests adverse inferences on the injury issue as sanctions for respondents' failure to provide discovery. Specifically, it is requested that it be inferred that respondents have made a significant market penetration, and that their actual sales and market penetration is substantially higher than 2.5% and is legally sufficient for assessing actual injury (Staff Response at 11). To the extent that this is a request to make up a larger sales figure for respondents despite deposition testimony of record on the extent of such sales, such an inference would conflict with the record. It has not been shown specifically how the respondents' discovery responses have been incomplete and evasive precisely on the extent of their domestic sales. The deposition testimony of respondents' Borkent by its terms evidently purports to recount all sales through November, 1987. Under Commission practice adverse inferences are appropriate as discovery sanctions when the withholding of information is sufficiently probative of the fact to be inferred. Evidence concerning suppression to complainant's prices has not been addressed by complainant and the staff. Consequently, the requested inferences are hereby denied without prejudice.

To the extent that an adverse inference is being requested that all

this inference is supported by the record and is granted as a sanction for withheld discovery on pricing. See, Staff's comments of January 22, 1988 in response to Order No. 8.

Lost Sales and Underselling

Respondents have imported and sold in June, 1987 approximately

accused pocket gas filters, model designation

at a total value of at least

(Motion, Ex. 6 at 26; Ex. 7). Previously the had been a customer of complainant's distributor. Complainant's inventory and excess capacity is established, and consequently such lost sales to respondents for the are established (Motion Ex. 1 at 2, 5; Ex. 3 at 2). Complainant's analogous model filter, the Viledon F-45, carries a price of $76.10 per unit, while respondents' model was listed at $ a unit and actually sold to the per unit (Motion Ex. 1 at 4-5; Ex. 7).

Market Competition and Import Penetration

It is uncontested that respondents are direct competitors of complainant in the domestic market for pocket filter element sales. Id. Respondents' pocket filter elements are virtually identical to complainant's pocket filters and respondents' promotional literature only compares respondent's Filtrair product features with complainant's Viledon product features, again evidencing direct competition (Motion Ex. 5). Respondents have not produced any literature comparing their pocket filter product performance to any products other than complainant's pocket filters (Motion Ex. 6 at 49-52). Respondents' principal Borkent testified at a deposition that he believed Filtrair pocket filters also compete directly with U.S. made pocket filters other than those of complainant and that the majority of all pocket filters in the U.S. have the same dimensions as those of complainant and respondents' product (Motion Ex. 6 at 49). However there are specific Viledon counterparts to the Filtrair models PFI/EU5, PPS/EU3, and the PPL/EU4 (Motion Ex. 6 at 52). In its response to the complaint, respondents did not deny the allegations of paragraph 44 of the complaint that both complainant and respondents' gas filter elements are sold to the same community of customers. Additionally, respondents thereby admitted the allegations in the complaint that respondents' activities will result in lost sales of gas filter elements and lost profits to complainant, reducing complainant's capacity utilization (Response at 15).

Complainant's 1987 sales, coinciding with the beginning of domestic production and consisting overwhelmingly of domestic industry production, were units and approximating roughly in domestic sales (Motion Ex. 1 at 2). Respondents' pre-1987 sales are not a potential source of injury to a domestic industry which was not then in existence and so was not in the competitive market to suffer economic injury.

In terms of units sold respondents' sales constituted approximately % of the domestic industry sales.

Taken out of context, respondents' level of sales appear to constitute only a small percentage of those of the domestic industry. However, virtually all of respondents' sales are established lost sales to complainant's former customer and direct causation is proven. Complainant has been involved in lengthy and extensive efforts to develop the market for its pocket filters. This has involved "considerable missionary" and educational work, and the extensive costs of U.S. manufacturing start-up, and consequently complainant has to date suffered net losses on its total sales of pocket filters, demonstrating a significant need for additional sales revenue and a relative susceptibility to injury (Motion Ex. 1 at 3). On the basis of the relatively substantial lost sales, established direct competition and the absence of any contrary contention, the administrative law judge finds the facts appropriate to establish that the domestic industry has suffered substantial injury caused by the imports of respondents.

B) Tendency to Cause Future Injury

Factors considered in determining the likelihood of substantial future injury include underselling, increasing levels of import market penetration, and the capacity and intent to manufacture the infringing articles and export them to the U.S. Certain Reclosable Plastic Bags, 192 USPQ at 680.

Principals of respondents Filtrair founded APB corporation in Delaware in 1984 to distribute the filtration products of Filtrair B.V. in the U.S. (Motion, Ex. 6 at 9). From October 1984 through 1986 Filtrair imported into the U.S. filter mat material alone of the type which could be incorporated into Filtrair pocket filter models. Id. at 19.

Respondents displayed the early imported pocket filters to distributors and wholesalers, and through those distributors, to domestic automobile manufacturing plants, including Volkswagen, Nissan, Chrysler, Ford, General Motors and Toyota (Motion, Ex. 6 at 21-23). Respondents' 1986 sales of the first imported accused pocket filters were approximately $ in value, and made to a distributor in the area (Motion, Ex. 6 at 26-27).[5] Respondents' sales through November 1987 units (Motion, Ex. 6 at 26-27.

Promotion

Respondents have actively advertised and promoted and continue actively to advertise and promote their nonwoven gas filter elements for sale in the United States (Motion, Ex. 6 at 8). Respondents have stated their intention to market their nonwoven gas filter elements in the United States (Response to Complaint and Notice of Investigation, paragraph 51 at 12). Respondents have exhibited their pocket filter products at a domestic trade fair, the January 1987 International Air Conditioning, Heating & Refrigeration Exposition in New York City, Response, paragraph 24 at 8. Deposition testimony establishes that domestic customers desire the Filtrair PFL model (Motion, Ex. 7 at 27.) Prior to respondents' entry into the United States market respondents knew that there were substantial sales of complainant's Viledon pocket filters and that Filtrair products are similar as far as the end user is concerned (Motion, Ex. 6 at 51-52).

---

[5] Although promotional activities occurred before the advent of domestic production, they are nevertheless relevant to the likelihood of future injury.

Respondents' substantial capacity for production of pocket filters is established. Respondents' principal Borkent's deposition testimony indicates that respondents could supply a significant part of need for pocket filters, and that they could also supply the needs of the other domestic automotive manufacturers and distributors and wholesalers that respondents have visited (Motion, Ex. 6 at 23-25). and other domestic auto manufacturers have been customers of complainant's pocket filters (Motion, Ex. 6 at 23). Respondent Filtrair sells roughly $ worth of pocket filters in the European market alone, with overall product sales of $ in 1986 (Motion, Ex. 6 at 37, 18). It supplies car manufacturers in Europe with identical pocket filters, including and European subsidiaries of and . Filtrair and its supplier of nonwoven mat material for pocket filters, Borkent B.V., do have capacity to increase their production of fabricated filters and could handle an increase in demand. Although respondents' Borkent testified that it is currently manufacturing on a three shift basis, he confirmed that there is extra production capacity stating that there is always capacity left to do more (Motion, Ex. 6 at 46). Respondent Filtrair shares a manufacturing facility with Borkent in Holland of approximately square feet in size, with Filtrair having approximately 5 employees and Borkent 60. Borkent is owned by the principals of respondents Filtrair and APB Corporation and is in terms of capitalization (Motion, Ex. at 16, 18). The domestic distributor APB Corp. has sold roughly $ worth of filter mats in the U.S. (Motion, Ex. 6 at 19. Filtrair literature states that the company is a leader in its industry worldwide and is a part of a specialized non-wovens group formed in 1921 in the Netherlands (Complaint, Ex. 9; Response to Complaint and Notice of Investigation, paragraph 12 at 5).

As indicated above, significant underselling has been shown. Underselling, intent and capacity to manufacture and export the accused products to the United States, increasing import levels, and direct competition all demonstrate a probability of future injury caused by respondents' imports, particularly in the face of a complete absence of contrary evidence or contention. Circumstances indicating likely increase in imports are presented by the comparative recentness of respondents' pocket filter efforts in the U.S. market, as well as its success with several of the same high volume consumer automotive manufacturers in Europe. For the foregoing reasons the administrative law judge finds the facts appropriate to establish that there is probable substantial future injury to the domestic industry practicing the patent in issue.

Motion Docket No. 275-4 is granted to the extent indicated.

Counsel for the parties shall have in the office of the administrative law judge those portions of the initial determination which contain confidential business information to be deleted from the public version of this initial determination no later than noon on Friday, March 4, 1988. If no comments are received from a party it will mean that the party has no objection in removing the confidential status, in its entirety, from this initial determination.

This initial determination is hereby CERTIFIED to the Commission, together with all papers filed in connection therewith.

This initial determination granting complainant's motion for summary determination shall become the determination of the Commission 30 days after the service thereof, unless the Commission, within thirty days of the filing of this initial determination shall have ordered review of this initial determination or certain issues therein pursuant to 19 CFR 210.54(b) or 210.55, or by Commission order shall have changed the effective date of this initial determination.

In view of the forthcoming hearing date and the May 26, 1988 date when the record must be certified to the Commission, early action by the Commission on the initial determination is respectfully requested.

Paul J Luckern

Paul J. Luckern
Administrative Law Judge

Issued: March 1, 1988

CERTAIN NONWOVEN GAS FILTER ELEMENTS 337-TA-275

CERTIFICATE OF SERVICE

I, Kenneth R. Mason, hereby certify that the attached Order was served upon Juan Cockburn, Esq., and upon the following parties via first class mail, and air mail where necessary, on March 8, 1988.

Kenneth R Mason

Kenneth R. Mason, Secretary
U.S. International Trade Commission
500 E Street, S.W.
Washington, D.C.

FOR COMPLAINANT: **FREUDENBERG NONWOVENS LIMITED PARTNERSHIP**

Italo H. Ablondi
F. David Foster
ABLONDI & FOSTER, P.C.
1776 K Street, N.W.
Washington, D.C. 20006

Stephen B. Shear
Peter F. Felfe
FELFE & LYNCH
805 Third Avenue
New York, N.Y. 10022

FOR RESPONDENTS: **FILTRAIR B.V. & APB CORPORATION**

John J. Byrne
John W. Polk
Bradford E. Kile
Kevin M. O'Brien
Francisco J. Cimadevilla
BAKER & MCKENZIE
815 Connecticut Avenue, N.W.
Washington, D.C. 20006

GOVERNMENT AGENCIES:

Mr. Charles S. Stark
Antitrust Div./U.S. Dept of Justice
Room 7115, Main Justice
Pennsylvania Avenue & Tenth Street, N.W.
Washington, D.C. 20530

Edward F. Glynn, Jr., Esq.
Assistant Director(International)
Bureau of Competition
Federal Trade Commission
Room 2636
601 Pennsylvania Avenue, N.W.
Washington, D.C. 20580

Darrel J. Grinstead, Esq.
Dept of Health and Human Svcs.
Room 5362, North Building
330 Independence Avenue, S.W.
Washington, D.C. 20201

Michael T. Schmitz
Chief Counsel
U.S. Customs Service
1301 Constitution Avenue, N.W.
Washington, D.C. 20229

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

In the Matter of CERTAIN NONWOVEN GAS FILTER ELEMENTS	)	Investigation No. 337-TA-275

Errata to Order No. 13

Last sentence of footnote 2 on page 5 has been deleted. Also line 14 of page 7 has been changed to read:

> "the exploration of claims 1, 2, 3, 4, 6, 7, 8 and 9 of the patent at issue since"

The errata has been made in view of Order No. 4 which granted complainant's motion to amend the complaint and notice of investigation to include claim 6 of the patent in issue.

For convenience of the parties, substitute pages 5 and 7 have been included with this errata.

Paul J Luckern
Paul J. Luckern
Administrative Law Judge

Issued: March 2, 1988

OFFICE OF THE SECRETARY
DOCKET/USITC
88 MAR 2 AM 11:37
RECEIVED

BEST COPY AVAILABLE

consisted overwhelmingly of domestically produced Viledon filters (Motion, Ex. 1 at 2-3). Previously the Viledon pocket filters were produced in West Germany and distributed in the U.S. by Eaton Products International (Eaton) of Birmingham, Michigan since the early 1980's. Id. Importation of Viledon filters ceased in late 1986. Id. Complainant acquired the distribution organization of Eaton by purchase in early 1987 and this distribution is now known as the Viledon division of complainant. Id.

Complainant and respondents in a stipulation served on Feb. 24, 1988 have stipulated and mutually agreed that claims 1, 2, 3, 4, 6, 7, 8 and 9 of the sole patent in issue read upon complainant's "F-45, T-60, and MF-85, 90, 95 gas filter elements ...[2][3][4] Two of the Viledon model filters,

---

[2] According to the notice of investigation the alleged unlawful importation consists of "importation of certain nonwoven gas filter elements into the United States, or in their sale, by reason of alleged infringement of claims 1, 2, 3, 4, 7, 8 or 9 of U.S. Letters Patent 4,056,375." However it is the understanding of the parties that claims 1, 2, 3, 4, 7, 8 and 9 of said patent are in issue. (Prehearing Tr. at at 6 to 9).

[3] The administrative law judge notes that the staff by regulation has the complete rights of a party litigant in this investigation, 19 CFR 210.4(b), and that the staff has not expressly joined in the stipulation which was served after the submission of the staff response. However, the staff in this investigation has taken a position in favor of Motion No. 275-4 and the existence of a domestic industry and has been served with a copy of the stipulation. Moreover the stipulation is found to be fully consistent with the staff's position. Consequently, the stipulation is found effective and binding in this investigation.

[4] Injury under section 337 in this investigation is premised upon the importation or sale of products infringing a valid patent. Infringement by respondents' air filters of a valid patent has not been stipulated or admitted, and has not been shown of record by probative evidence. The parties' submissions on this motion for summary determination appear to leave the question of any infringement and validity and/or enforceability for determination at the hearing. Accordingly the administrative law judge will

(Footnote continued to page 6)

filters, with 30 employees in manufacturing and 7 in product development and technical services (Motion, Ex. 2 at 3). Complainant's Kentucky plant employs one filter test engineer, and one quality assurance manager supervising four technicians who devote a substantial amount of their time to quality assurance procedures (Motion, Ex. 3 at 3). Additionally, 35 domestic Viledon Division employees are involved directly in the assembly, storage, distribution and sale of Viledon gas filters (Motion, Ex. 2 at 3.) The Viledon Division, formerly Eaton, sells to 50 independent sales agents in the U.S. employing approximately 200 sales personnel. (Motion, Ex. 1 at 3). Marketing activity includes both selling and product support services such as testing and product development. Id.

Based on the foregoing, the administrative law judge finds, pursuant to Commission rule 210.50 that, there has existed a domestic industry devoted to the exploration of claims 1, 2, 3, 4, 6, 7, 8 and 9 of the patent at issue since late 1986 and that the domestic industry is efficiently and economically operated, as evidenced by modern facilities representing a substantial investment in production, by an extensive sales, distribution and technical services operation, and by quality assurance programs.

II. Importation and Sale of Respondents' Gas Filters

Importation to and sale in the United States of respondents' gas filters are shown by discovery responses (Motion, Ex. 6 at 21-26). Additionally, by their response to the complaint and notice respondents admitted that respondent Filtrair, B.V., a Netherlands company, manufactures pocket air filters there, and offers those air filters for sale in the U.S. through respondent APB Corporation, a Delaware based importer of Filtrair's air filters (Response at 5, paragraphs 12, 13 & 22).

CERTAIN NONWOVEN GAS FILTER ELEMENTS 337-TA-275

CERTIFICATE OF SERVICE

I, Kenneth R. Mason, hereby certify that the attached Confidential Order was served upon Cheri M. Taylor, Esq., and upon the following parties via first class mail, and air mail where necessary, on March 2, 1988.

Kenneth R. Mason, Secretary
U.S. International Trade Commission
701 E Street, N.W.
Washington, D.C.

FOR COMPLAINANT: FREUDENBERG NONWOVENS LIMITED PARTNERSHIP

Italo H. Ablondi
F. David Foster
ABLONDI & FOSTER, P.C.
1776 K Street, N.W.
Washington, D.C. 20006

Stephen B. Shear
Peter F. Felfe
FELFE & LYNCH
805 Third Avenue
New York, N.Y. 10022

FOR RESPONDENTS: FILTRAIR B.V. & APB CORPORATION

John Bryne
John W. Polk
Bradford E. Kile
Kevin M. O'Brien
Francisco J. Cimadevilla
BAKER & MCKENZIE
815 Connecticut Avenue, N.W.
Washington, D.C. 20006